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ORIGINAL ARTICLES

DIET IN ITS RELATION TO DISEASE.*

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IN presenting so broad a subject for your consideration and attention something should be said by way of preface as to the phases that our limited time and your patience will permit. Diet is a word of potent meaning and varied interpretation. I well recall the shudder of anguish that would thrill my boyish soul when mother used to say, "You must diet," for it brought up visions of deprivation from all the good things that made eating worth while and in their place a strict course of Lenten severities. Nor is this conception confined to early life, for not so long ago a patient assured me of her discovery that the qualifications of a specialist in diseases of the stomach included only forbidding the eating of the things the patient liked and an insistence on the distaseful ones. But in its broad meaning diet includes everything that is used for food and drink and a consideration of such a definition should deal with the various articles we eat and drink, their value as tissue builders, their appropriateness for the bodily economy, the proper preparation of each, the proportion in which the various food stuffs should be mingled and their relative degree of digestibility. Of no less importance is the way in which food should be eaten and the amount required for the needs of the body. As all this demands a knowledge of the chemistry of food, of the digestive juices and the complicated reactions that occur in the digestive system, it is obviously impossible to more than glance at a part of the question and confine our attention to a single phase of this vitally important subject.

Our title, then, limits us to a consideration of diet as a cause of disease and of the beneficial effects of properly selected food in the treatment of nutritional disturbances. The trend of medical science to-day is toward the prevention of disease fully as much as toward its cure, and following the sound old maxim that an ounce of the former is worth a pound of the latter let me first emphasize the ways in which improper diet may cause disease, and later, if time permits, indicate some appropriate limitations and applications of diet in its therapeutic uses.

We may dismiss with the mention those instances in which a specific form of food causes a well defined disease, such as pellagra, a peculiar affection due to eating diseased maize; the various eruptive troubles occurring in susceptible people due to strawberries, crabs, lobster and other shell fish; the diseases following the ingestion of food infected by various parasites such as trichina, tape worm and the like; the infectious diseases due to contaminated food or water, such as typhoid fever, cholera and beri beri; the acute intestinal inflammations following excessive eating, or from food that has undergone putrefaction, or from poisons taken by mistake, as toadstools; sprouted potatoes have been known to cause serious gastric and intestinal symptoms; and a variety of less common ills may arise from specific irritants that occur in food accidentally or from careless handling and preservation.

The perfect diet is one so arranged that the proportion and amount of its nutritive constituents is just sufficient to meet the daily wear and tear and supply a slight excess for the tissues to store up in reserve. These constituents are three—proteids, fats and carbohydrates. Proteids are the nitrogen bearing food stuffs and include meat, gelatin, albumin, the casein of milk and other substances from animal sources with a few of vegetable origin, notably gluten. Proteids, together with water and a variety of inorganic salts, are essential to the formation of new tissue, while the fats, such as butter, cream and olive oil together with the carbyhydrates —sugars and starches—supply the energy for the body; in other words, its fuel. Exhaustive observation and experiment have demonstrated that life may be maintained indefinitely on proteids when sufficient water and mineral salts are supplied. Carbohydrates and fats cannot by themselves support life. It must be emphasized here that these terms are applied to the starches, sugars and fats in their pure and uncombined states; most foods contain all of the nutritive constituents in varying proportions. We may, for instance, class the potato with the starchy foods, for it contains over 10 per cent. of starch. But it also contains 1.2 per cent. proteid and a trace of fat, beside mineral substances. On the other hand, roast beef, while mostly proteid, contains considerable fat and traces of muscle sugar; and the cream of cows' milk yields generous amounts of albuminous, or proteid, material and mineral salts beside milk sugar, in addition to the preponderating amount of butter fat—20 per cent. as an average. It is evident, then, that in choosing a diet the various articles of food should be selected so as to balance the excess of proteid in one against the preponderance of sugars and fats in others in order that a proper average may be attained.

Let us now glance very briefly at what takes place when food is taken into the digestive tract. Mastication in the mouth serves to reduce it to a pulp and exposes the starch to the action of the ptyalin of the saliva by which some of the starch is converted into sugar, this action persisting for some little while after the food is swallowed. Therefor thorough chewing is necessary. In the stomach the pepsin and hydrochloric acid of the gastric juice release and liquify the albumins, rennet ferment precipitates the casein of milk, and the churning motion of the stomach further helps to reduce the pulp to a liquid form. As this slowly passes into the upper intestine it encounters the bile from the liver, the complex secretion of the pancreas and the se-

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cretion of the intestine itself. Through the agency of these various ferments the starches are changed to soluble sugar, the fats to an emulsion and to soap, and the proteid substances left from gastric digestion are further completely digested. The resulting fluid is then absorbed through the intestinal walls into the lacteals which in turn carry it to the thoracic duct which conducts it directly into the blood current. It thus reaches the mass of individual cells that make up the body and furnishes the nourishment they require. But before it can be taken up by the cells there occurs an obscure but very complicated chemical reaction, which, if imperfect, results in certain complex substances known as "purin bodies," the presence of which in the economy irritates its delicate adjustment and a number of nutritional diseases result. When the chemical interchange is normal and complete the resulting waste product is a substance excreted through the kidneys and known as urea. Beside the interchange of fresh nutrition for the waste products of cell activity certain of the nutritive constituents are stored up for future use—sugar and iron in the liver and fat in the subcutaneous tissues and elsewhere.

There is in nearly all food a certain indigestible residue that is of importance as a stimulant to the muscular walls of the stomach and intestines, for it furnishes a resistant bulk against which to exert their strength. One cannot too strongly emphasize the importance of a healthy tone in the muscular layers of the stomach and intestines—an importance fully as great as in the muscles that govern locomotion. Without this, stagnation and putrefaction result in both stomach and intestine with the subsequent ill health that follows the absorption of the toxic materials elaborated in the flaccid organs. Exercise, then, is as essential for the stomach as for the legs, and to provide exercise we must provide food so prepared as to make the stomach—and the bowel as well—do a certain amount of actual physical work.

So much by way of theory, which is dry and uninteresting, but as needful for the framework of a talk on dietetics as is the sawdust stuffing to a doll. It remains to build the doll around the sawdust—to apply the theory to the practical question of what and when and how, and how not, to eat.

Who has not felt his mouth water and experienced a sense of pleasurable anticipation under his vest when his delighted eye travels over the alluring announcements of patent breakfast foods that alternate with advice as to personal and household cleanliness, the care of the scalp, how to walk on air, how to cure a headache (and incidentally to inaugurate heart disease), the best material for petticoats and all the other illustrated appeals to the pocket book the B. R. T. provides to wile the tedium of a journey in its cars? Truly the malted breakfast food and the toasted corn flake are a power in the land, and as we read a little further we learn that there is a reason. It is gradually being borne in upon us that in time we shall no longer have to tire our jaws with fruitless chewing—the kindly manufacturer will predigest our food for us—and our children's children will carry a week's rations neatly compressed in their wrist bag or waistcoat pocket. One sympathizes with Mr. Dooley when he said to Hennissy, "Lave me rrrun arround to th' stable an' put on me collar befure Oi thry thim patint oats av yours, Hinnissy." But already there is a little cloud like a man's hand coming out of the sea. The Fletcherites are abroad and the uncooked food enthusiasts are proclaiming themselves, and a Boston philanthropist bespeaks our consideration of his diet of selected sea sand as a corrective for overeating.

Seriously, teeth were provided to chew with. The body soon dispenses with redundant organs, and if we do not use our teeth we shall lose them. If we do not give our stomachs work to do they will shrivel up. We must use reason in our choice of food. There can be no question that a too concentrated diet tends to cause trouble with the teeth, from lack of work; it fails to provide sufficient exercise for the stomach and thus promotes in time intolerance and irritability on the part of that organ; and, because of the lack of a bulky residue, the bowel becomes sluggish, reabsorption of toxins results and they in turn poison the nervous system and promote mental inertia, an irritable temper, headaches and the like, while muscular weakness and anemia indicate their pernicious effects on the tissues and the blood.

Please do not understand me as condemning concentrated food. It has its place in certain disorders of the digestive tract and in acute diseases, when it is indispensable. But the systematic use of a concentrated diet is harmful because it not only carries with it the effects just mentioned, but also is apt to contain too much nourishment in a small bulk and may therefore produce results such as come from habitual consumption of excessive amounts of food.

A word as to fads in eating. Frank R. Stockton, whose quaint wit has been the delight of the children of all ages for whom he wrote, described the aged tutor of a boyish prince who had attained to his advanced age by careful chewing of his food—42 bites to each mouthful. On the boy's unexpected elevation to the throne the tutor became regent, and so, in order to live until the prince should be able to rule, he increased the number of bites to 64! What a pointed reproof to the quick lunch victim! Whether from this undoubtedly authentic case arose the practice called Fletcherism I do not know, but one must heartily approve the habit of careful mastication, for it prepares the food properly for the stomach, and by compelling deliberation prevents surfeit. But one must not rush to the conclusion that a good digestion depends on careful chewing alone. It will fail if the quality and amount of food is injudiciously chosen.

The essential idea in the method to which Horace Fletcher's name is attached emphasizes the importance of thorough chewing without regard to a conscious choice of food, his contention being that if one masticate everything taken into the mouth, taste will regulate the character of the food, the time consumed in chewing will reduce the quantity to a normal limit and health, vigor and economy will result. The beneficial effects of such a system cannot be gainsaid. The principle is no new one, but if Fletcher has been instrumental in popularizing the idea his service to his kind is as real as though he had dis-

covered it.

On the other hand, the advocates of raw food, especially of raw cereals, are in error when they claim that health ensues from a diet of raw oatmeal, turnips and carrots. It has been abundantly proven that a diet of raw starch, which makes up the bulk of such forms of food, imposes a burden on the digestive organs that in time works havoc with the body's economy. The worst case of malnutrition that I ever saw in an adult was that of a domestic servant who lived almost exclusively on a diet of raw oatmeal. Its bulk satisfied her appetite but its poverty in all the nutritive principles except starch soon starved her tissues. It is appropriate to mention here a habit common to cooks in particular—that of excessive tea drinking. Though they use a different beverage they imitate Sairy Gamp's motto: "Bottle on the chimley piece and let me put my lips to it when so dispoged." Distaste for good food, gastritis and anemia are the results.

Not so long ago a band of enthusiasts with deranged stomachs used to frequent our city parks where they browsed on tender young grass as a cure for their dyspeptic symptoms. So far as I can ascertain Nebuchadnezzar was the only man who ever throve on grass exclusively and, as we know, the circumstances in his case were exceptional. Although we may recognize bovine and sheepish characteristics in certain people the bulk of mankind is omnivorous and for the average man a judicious blending of all forms of food in moderation is essential to health. Furthermore, cooking improves not only the taste, but the nourishing qualities of food, and it might be well to add, contentment and a good temper are great aids to digestion. One might say "Smile while you eat."

Now as to excessive eating. This may be either in the direction of too much bulk or too much nourishment—that is, too concentrated a diet. As to the former, conscious gluttony is a vice of the gourmand and meets with such general censure that I need give it but passing mention. But overeating in a milder degree is common enough as a habit to deserve consideration. We must not forget that with most people eating becomes a habit, and we breakfast, lunch and dine in profusion because we have always done so. We forget that as full grown adults we do not need the same amount of building material as during the constructive period of rapid growth. We marvel at the capacity of little boys and say that their legs must be hollow to accommodate all that they can stow away, and we carry into middle life the habit of childhood, forgetting that we need only enough to supply daily waste. And as age advances and less food is needed we still keep the furnace over-supplied with fuel.

This simile of a furnace may be used further to illustrate the effect of supplying too much nourishment with insufficient activity, for just as an excess of fuel cuts off the draft and clinkers the fire, so does an excess of proteid—that is nitrogenous—food impose too great a burden on the assimilative powers of the body, incomplete combustion results and toxic products are poured into the blood to poison the entire system.

This is precisely what occurs in that group of nutritional disorders that are variously called gout, or the gouty habit, or lithemia, or the uric acid diathesis, of faulty metabolism, to use the now generally accepted term. Possibly no form of disease is so widespread or is manifested in so many dissimilar forms. Some of its victims can point to a port wine tinted ancestor and thus lighten the burden of their inheritance by pride of family, but many more must struggle against the load without the comfort that comes from "noblesse oblige."

Take for instance the college athlete. During four years he is in active training, performing daily a large amount of hard physical work to keep his muscles at their best, and consuming a commensurate quantity of highly nourishing food to repair waste and store up energy. As a result his appetite is voracious, his digestion perfect and his liver capable of storing up and discharging energy in excess of immediate demands. But when he enters upon a professional or commercial career he finds that his opportunities for systematic exercise are curtailed, while he has taught his appetite to demand a generous supply of food which by taste and custom is apt to be rich in nitrogen. For a considerable period his still active growth provides a balance between the intake and the outgo, but gradually the system becomes surfeited, the liver becomes over-supplied and sluggish and he finds that he is lethargic where he was spry, lazy where he should be active, and his mental processes are no longer spontaneous and brilliant. He must force himself to keep up to his standard. He becomes fretful and irritable; he may have dull headaches; he is not satisfied with a reasonable amount of sleep, but is always tired. His digestion becomes impaired and he experiences distress after eating. His friends advise him to give up coffee and he does penance by swallowing gallons of insipid substitutes. His family take a mean advantage of his unhappy state and point out that he is smoking too much. Various aches and pains may develop in his muscles or joints. His kidney secretion becomes concentrated and inadequate. He patronizes all sorts of guaranteed remedies with occasional transient benefit. As time goes on the deleterious effects of the circulating poisons bring about hardening of the arteries, a mild, insidious, but very real and permanent change in the secretory power of the kidneys and impairment of the vigor of the heart muscle; and premature old age results.

Please do not gather from what has just been said that this unhappy condition can result from overeating alone. Other causes may and do produce a precisely similar result. The steady abuse of alcohol, for instance, is an all too frequent factor. But I may point out that alcohol is by some authorities classed among the foods, and when so considered may well be used as an illustration of a harmful—nay, poisonous—diet. I trust that you will pardon a digression from the main subject if I here emphasize the harmful effects of alcohol. I do not refer to its excessive indulgence, which involves a moral as well as a physical question, but to the constant use of small quantities. There can be little question that although the body is capable of burning up about an ounce of alcohol a day, the habitual use

of even such small amounts in time leads to hardening of the arteries and cirrhosis of the liver and kidneys. It is not too much to say that the premature breakdown of many a substantial and useful citizen may be directly traced to the habitual use of alcohol in moderation, and yet such a man would be the first to condemn drinking in others and would indignantly resent the imputation if applied to himself.

The harmful results of an excessive starchy diet have already been instanced. A large proportion of raw starch is converted into sugar by thorough cooking and the pancreatic ferment is capable of the further conversion of much more. It is therefore obvious that sugar need be added to an ordinary diet only in sufficient quantities to render it palatable. An excess of sugar is to be deprecated and the candy and ice cream soda habits should be frowned upon. Chocolate is chemically closely allied to uric acid and in susceptible persons may act as an irritant to produce distinct symptoms of a gouty nature. Sugar, on account of the ease with which it splits up into water and carbonic acid gas lends itself readily to fermentation in the intestine and helps mightily in producing flatus. I am fearful that if I add too generously to this catalogue of delectable but harmful dainties you will wail with Israel of old, "Alas! for the fish which we did eat in Egypt freely; the cucumbers and the melons, the leeks and the onions and the garlic." Let me qualify the injunction a little and suggest that a little sugar is desirable for its energy producing qualities, but woe to the house that sets an open candy box on its domestic altar!

A diet overrich in fat, may also cause trouble by interfering with digestion in this way: The ordinary fats, such as butter, melt freely at the temperature of the body. As they melt they cause a coating about the other portions of the meal and prevent a proper attack by the gastric juice. This delays digestion and by keeping the food overlong in the stomach promotes fermentation. This in turn liberates butyric acid, the substance that is present in rancid butter, which is an active irritant to the mucous membrane of the stomach. Temperature and surroundings modify our power of utilizing fat, a matter of everyday observation, for we instinctively eat less greasy food in summer, while in cold weather pastry and such fat containing foods are more readily tolerated. Indeed, if we turn to the dwellers in arctic climates, we find that fat is the staple of food. A box of tallow candles finds its way to the heart (and incidentally to the stomach) of the Esquimaux maiden much more readily than any other love token, and a cake of soap is rapturously received, though she never washes. It is significant that the milk of arctic animals is peculiarly rich in fat, that of the whale and walrus, for instance, containing about 40 per cent., an evident provision for the protection of the young of these creatures against the extreme cold of their environment.

It has already said that proteids are tissue builders, while fats, starches and sugars are energy producers. The latter in addition possess the power of aiding the proteids in their building process, so that in their presence a much smaller proteid element is required to meet daily waste than if proteid food were consumed alone. Let me illustrate. Some years ago the so-called Salisbury treatment, consisting of an exclusive diet of meat and water, had an extensive vogue. It was found that unless the amount of meat was far in excess of what is ordinarily consumed the patient wasted rapidly, but if a moderate quantity of rice with a little butter were added the amount of meat could be reduced more than half. In other words a mixed diet provided more nourishment and greater energy with far greater economy in both quantity and cost of material. It is therefore both rational and economical to combine vegetables with meat. Of course it may be objected that the vast population of China and much of India lives almost exclusively on rice while certain tribes of South American Indians use nothing but beef and the Arctic people live almost entirely upon seal blubber and whale oil, but for Americans and other residents of the temperate zones a mixed diet seems to provide a maximum of physical and mental power with a minimum of expense. There are dyed-in-the-wool vegetarians who will take violent issue with this generalization, but I will venture the assertion that in the long run the vegetarian will fall behind in the race.

The question of economy in diet is an interesting and fascinating one but is hardly germain to our present subject. To those who are interested the bulletins of the Department of Agriculture will supply a mine of practical information on how to provide for a large family on a small income, even to supplying daily menus. The nutritive and gustatory advantages of salt codfish, pork and beans and oleomargarine are there compared with brazed tarpon, artichoke a la bordelaise and sweetbreads Isabella, or pate de fois gras so eloquently that one yearns for the former and wonders how the latter could ever attract him. That aspect of dietetic economy, however, which deals with the minimum upon which daily life may be advantageously sustained is pertinent for us to consider. Some comparatively recent experiments by Professor Russell H. Chittenden supply interesting data. He chose a number of healthy young adults from a variety of active occupations, among them a squad of soldiers from the regular army, students from the schools of divinity, medicine and other departments of Yale University, divided them into groups and after having carefully estimated the energy producing power of their ordinary diet and calculated the daily waste, proceeded to gradually reduce the quantity both in bulk and variety. Unlike the economical farmer who "got his horse down to one straw a day and would have gotten on without that if the durned brute hadn't died," he found that after weeks of restricted diet the subjects of his observations throve, gained in strength and mental vigor and actually accomplished more work than they had ever done before. The following list, taken from Prof. Chittenden's work on "The Nutrition of Man," represents a diet appropriate for an average healthy man weighing 187 pounds. It is the practical expression of the above mentioned experiments and is in no sense theoretical:

Breakfast: 1 shredded wheat biscuit, 1 teacup of cream, 1 German water roll, .21-inch cubes of butter, ¾ cup of coffee with ¼ teacup of cream, 1 lump of sugar.

Lunch: 1 teacup homemade chicken soup, 1 Parker House roll, 2 1-inch cubes of butter , 1 slice of lean bacon, 1 small baked potato, 1 rice croquette, 2 ounces maple syrup, 1 cup tea with 1 slice lemon, 1 lump of sugar.

Dinner: 1 teacup cream of corn soup, 1 Parker House roll, 1 inch cube of butter, 1 small lamb chop broiled, 1 teacup mashed potato, apple-celery lettuce salad with mayonnaise dressing, 1 Boston cracker, split, ½ inch cube American cheese, ½ teacup bread pudding, 1 demi-tasse coffee, 1 lump sugar.

His findings are somewhat too radical to be accepted without extensive confirmatory evidence, but they leave no room for doubt that we would do well to still further curtail our present notions of what constitutes moderation in eating.

So far we have considered the ill effects of injudicious eating, if so general and incomplete a summary deserves that title. Now let us glance at some of the same principles in the relief of disease. Did you ever hear Grandmother say "stuff a cold and starve a fever?" There is reason in the latter, at least. Consider what happens in typhoid fever. Here an acute disease produces high, persistent fever accompanied by numerous ulcers in the intestine. Obviously, in such a condition, we must choose only such food as will leave little or no residue to irritate these ulcers, or they might break through with disastrous results. Equally we must avoid gas-producing foods, for the same reason. Furthermore it is extremely doubtful whether the digestive processes are active in the presence of high fever. Certainly the tissues of the body are in no condition to assimilate much nourishment; and some authorities do not feed their typhoid patients at all, but prefer to let them live on their own resources, supplying merely an abundance of water. But for those of us who feel that some nourishment should be given milk is the rational fever food. Milk contains approximately 4 per cent. of butter fat, 3 per cent. of albuminous substances, 4½ per cent. of sugar, decided quantities of mineral salts and 88 per cent. of water. All the nutritive principles are present in sufficient amount to meet the requirements of a good food which has the advantage of leaving no residue. A disadvantage lies in the tough clot that forms as soon as the casein of the milk comes in contact with the rennet ferment of the stomach. Various expedients may be resorted to to remedy this defect. Lime water added to the milk before taking helps to form a finer curd. The fermented milk products like koumyss and kefir accomplish the same result, supplying at the same time effervescence and an acid taste that are grateful to the fevered tongue. Professor Elie Metchnikoff has recently published a series of articles advocating lactic acid milk. This closely resembles buttermilk, but is prepared by souring fresh milk with lactic-acid-forming bacteria. The finished product contains all the original ingredients of the milk plus lactic acid, but is free from acetic and butyric acids and alcohol which form in ordinary buttermilk. It is easily prepared for domestic use. He attributes sovereign virtues to it as an ideal food and has gone so far as to declare his belief that one may live to be a hundred if he will use it as an exclusive diet, or at least eke it out with a little black bread only. At all events it is a very desirable food in a variety of chronic gastric and intestinal ailments as well as in other diseases where the digestive tract becomes affected and a bland, unirritating food is needed.

There is still a general belief in the efficiency of beef tea, meat extracts, mutton broth, chicken and calves' foot jellies as nourishment for the sick. There is no question of their tastiness and appetizing qualities, but it cannot be said of them as Sam Weller said of crumpets that they were "werry cheap an' fillin' at the price," for they are neither. There is a very moderate nutritive value to the small amount of gelatin in meat jellies, but the food value has been cooked out of beef tea and as usually served it is composed of water, taste, color and smell. The same holds for clear meat soups while broths are richer by the rice or barley they contain. It is more than likely that patients who are reported to have lived for days on beef tea would have done fully as well on water alone. The idea that a sick man must have food at all hazards works hardship for the patient who does not need it, for the doctor who does not approve it, and for the family who must prepare it. We usually discover that Aunt Jane has advised beef tea, and as Aunt Jane has had her troubles and knows all about it she has the final word. It is that same Aunt Jane who keeps the windows tight shut and denies a drink of cold water to the sufferer. If food is indicated milk or some one of its preparations offers nourishment in small bulk which is well born by most patients for a long period.

Over feeding, or forced feeding, are terms applied to a method of supplying large quantities of readily assimilable food to patients whose strength has become exhausted as a result of prolonged illness and in cases of nervous depression. One step in the present day treatment of tuberculosis includes the eating of large numbers of eggs and drinking milk freely, the quantity of each being steadily increased up to the point of intolerance. The same method forms an essential part of the Weir Mitchell rest cure. Here variety is necessary as patients with nerves quickly tire of a monotonous diet, so some ingenuity is required to change the envelope and still have the contents milk and eggs. It is surprising how sufferers from either of the conditions just mentioned can accustom their stomachs to receive such an excess of nourishment and yet those who have previously revolted at any but the daintiest fare soon learn to accommodate five hearty meals a day. Naturally, during a course of forced feeding the strictest care must be given to the primae viae and due attention paid to the muscles and circulation which are kept active by massage and baths, while fresh air and sunshine are of fundamental importance.

In regard to the dietetic treatment of disease in general it seems to be the present tendency to draw away from established diet lists and to endeavor to suit the food to the patient rather than the patient to the die. This is particularly the case in the management of diseases of the kidney. Here a bland diet is needful and one relatively poor in nitrogen is desirable, but it seems wise to consult the taste of the individual as far as possible. Realizing that a regimen strictly in accordance with the theory of good treatment may not be sufficient to keep the patient in the best possible bodily vigor it is well to

relax the severity of our prohibitions and allow enough tasty food to keep him contented. If he is fond of milk and can depend on it as a staple, well and good; but if he dislikes milk and craves meat it seems wiser to allow enough to please his palate, for otherwise he will lose in mental poise what physical benefit he might gain and the object of treatment be defeated. Judgment and a nice appreciation of the patient's personal idiosyncrasies must govern our estimate of the needs of each individual.

Space forbids any attempt to specify the advantages and disadvantages of individual articles of diet. It would be interesting to mention the appropriate place of potatoes, fruit, green vegetables, farinaceous foods and so on in the bill of bare, but as that necessitates a detailed discussion of each in both health and disease it is best left for the text book or technical magazine. If I have been fortunate enough to emphasize a very few of the facts of common sense eating I may feel that I have not trespassed unwarrantably upon your indulgence.

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THE RENEWAL OF LIFE.

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THE renewal of life by the living organism is the process of reconstruction of the vital elements of the body as fast as worn-out material can be replaced by new that is sanitary. In our earlier experience in medicine, some of us doubtless may have been disposed to believe that it was the skill of our methods with prescribed remedies that rescued the patient from illness and shortened life. Our drugs were complacently butted in agains disordered conditions labeled by many names. The system tolerated the doses to various degrees, they evidently antagonized or neutralized the wrong and contributed a physical service, but the natural capacity for endurance won the rescue by the body's persistent function of preserving itself through the process of continual renewal of the atoms of its structure. Elimination of worn-out material may be compared to the deliverance from us of our dead selves. Nutrition of cells from fresh material conducts a continuous resurrection from the dead within us. And while the equation of the renewal of life is maintained we continue to live. The rate of expenditure and restoration records the sum total of existence. Habit sets the guage of expenditure and supply—always tempered by the degree of purity or impurity of inhaled breathing-air by which the vitalizing efficiency of the blood cells is determined.

A recent psycho-physiological philosopher among us has proclaimed that we should live to be one hundred years of age before our bodies return to mother earth—"dust to dust, ashes to ashes"—death. It is probable that he will himself fall short in his estimate; but why should not men in general successfully exceed by many years the minimum of three score and ten—at least as pensioners for service in the world's work. Some pessimistic reasoner may fear that a surfeit of old folks would prove an encumbrance to local paths of progress. But have not the fathers and mothers as much right to the consolations of life as have the sons and daughters? It may be asked—does the ripened experience and cautionary influence especially benefit the expansive push of the younger, more virile, perhaps more progressive generations whose feet press hard upon the heels of aging predecessors in both the modest walks of life and modes of managing the business immensities of the sphere we inhabit?

The pith of this doctrinaire's code for attaining long life is simply corrective of the excessive and wasteful strain of vitality characteristic of the modern madness of seeking the fleeting gain of money at the expense of quite every collateral interest. Is it not a fact that men and women these days strenuously rival each other in arduous struggle to win in their own way the competitive race for money, for position, for fashion's grilling conquests and shifting shows that ruthlessly antagonize the hygiene of mental rest and physical recuperation for the eager recruits of riotous ambitions? In the daily and nightly recoils of faltering nerves, weakening hearts, fading vitality, the whirling masses assume that the only antidote needed is a qualified doctor poised upon every milestone by the eventful wayside ready at call to interpose some facile prescription or drug that will silence the threat of disability, that will arrest the prowling thief of strength, that will throttle the dethroner of enjoyment, and will revive to confident assurance the bending form of breaking energies.

But such frenzied procedures can confirm no promises of one hundred years of normal existence this side the obliteration of the silent grave. Hence it is so often proven by the spectres of sudden deaths that the boasted values of our medicines are defied their professed virtues as healers of physical ills, are denied their proposed relief, and hence also the mournful laying aside of broken reeds at the heyday hour of earthly proficiency in business interests, in social and family functions. "Doctor, I have lived a hundred years already!" exclaimde a restless woman of the world to me one day whose ambitions resembled the dance of a merry whirlwind in the dust of the street. Two years later I attended her funeral—dead at thirty-seven! Rational activities, both of earthlv gain and earthly pleasures, are regulated by wisdom and moderation that are sanitary and defensive to vitality and continued effectiveness in our human spheres. As physicians identified with our patrons, the latter become our other selves. Therefore if we will timely and impressively instruct those with strenuous ambitions regarding the excelling values of the check-rein of caution in their high-pressure expenditures of themselves in their push of toils and pursuit of pleasures—a rational check-rein by which the vital source of their nervous energies shall escape the fatal toxemia of exhaustion and dissolution, we thereby aid them in doubling their substantial realistic enjoyments and successes as sojourners in the beautiful world that is theirs while they remain in it. We thus may render a professional service to our fellow creatures that reaps for us both crowns of gratitude and immortelles of fadeless remembrance. Allow me to speak from personal experience that can commend its conservative line of practice with complete confidence. In the exceptions where the sanity of such instructions was not heeded, and results rushed their victims on to mortal wreckage, I am

satisfied that the nutrition of their brains was morbid, the faculty of reason distorted, the will diseased, capricious, erratic, its own worst friend constitutionally.

As the obverse of this pathetic broken reed destiny, this rash waste of life's possibilities for strenuous men and women, our modern philosopher repeats the oft-told formula of simple life, tamed ambitions, enjoyable composure, the hygiene of sublime optomism as a habit of thought and spirit, all backed up by the comfort and power of prayer and of faith in the Divine helper and keeper of body and soul.

And there we are on the safer and happier road to the blessings and fruitage of a good old age. My own father was a representative of the type just described. He was nearly ninety-four years of age when he passed away to the unspoken beyond. His Bible was his daily and most worn book. He was an industrious open-air worker, on farm and also in sawmill business, from ladship till past sixty, when he assumed semi-pastoral life for thirty additional years. He attributed his length of life to his abstinence from intoxicating drinks and from heart-weakening tobacco, to his plain tastes and avoidance of excitements that pay in dividends of vibratory emotions and personal unrest. He had never listened to verbose locution about the capricious bacilli inhabiting the human body in life, hence he never feared any, and was by that much the gainer in comfort. Did he need doctors and drugs? Seldom, indeed, and then but briefly. During his last year infirmities overtook him and nature began to fail in the renewal of vitality. Then the prostration of grippe closed the scene. Mentally clear to the final hour—an example to the world of a good man who rounded out to normal fullness the useful cycle of earthly existence. Why should not the natural means and material, by reason of continued renewal of life, enable most men to attain the ripeness of a hundred years? We will turn to some obstinate facts. It has long been my conviction that the quality of nutrition of the cells of the body, especially of the brain and nervous system, moulds the quality of mind and will function as expressed by the choice and action of responsive individuals—moulds the personal traits and lines of habit.

It is to be hoped in this connection that when I refer to nutrition, it is not meant what is eaten and digested, but the quality of oxygenation and purification of the blood current by which the actual process of nutrition and reconstruction of body and brain as the organ of thought, of will and purpose, are effected through the laws of cause and effect in life. Sanitary processes with sanitary elements are fundamentally essential to install sanitary products of will power as controlling factors in human management. We believe in pathology. There is a pathology of the human will. A healthy, stable will is not naturally poised upon unhealthy tone of brain. Furthermore, healthy habits of life promote healthy brain and will function, even to prolonged years, by the normal renewals of the life process. The diverse results of men's careers mainly depend on the correctness or the error of their judgment and will. If the blood be degenerate, so will be the nutrition, the mental processes, the trend of temperament, the choice and deeds of life. If the will be diseased, judgment will not maintain a wholesome prudent balance. Misdirection, indulgence of errors of conduct will in marked degree color and characterize their way in life. The newspaper press grows blue in the face with surfeits of daily recitals concerning people gone wrong and lives shortened to the middle in the teeming affairs of the complex world about us. Scan a page of the profane schedule. Wild and tragic careers. Misguided ambitions. Revels in undiciplined emotions. Carousals with the demons of strong drink. Dalliance with Delilahs of sexual passions. Benumbment of natural sensibilities with the dope of nicotine. Manias of senseless criminality. Scheming with the gambling cards of wildcat speculations. Sacrificing the natural love for children and family with debauchery of abortion. Estranging the kinship of home for women's clubs, for euchre socials, for church bazaars, for dancing bouts to small hours of morning. Snapping of nerve fibre with foolhardy overstrain. Cramming the rational work of forty years into the exhausted span of twenty or less. Conscripting black crape, that honors mature age, to silently proclaim the hour of mourning from door knobs of the early fallen by the way. What more is needed to diagnose disease of the will as the prevalent shortener of human possibilities? And withal where is the mission of the doctor—the guardian and director of life's most precious interests? Can we reach to no higher altitude of professional service than to follow along behind and prescribe doses and fill out certificates for undertakers? Our work for bettering chances precedes the need for the minister.

It has become so customary to trifle with life, human life, and to make of it a machine to be twisted and rushed through tremendously extravagant plans of excessive grind, to cram its quota of pleasures into cornered niches or chance snatches of dog-eared, befagged opportunities, to wear it out prematurely with foolhardy strain, that it is small wonder how broad-gage manhood has shriveled, how jumbled brains, erratic senses, atrocious acts, degenerate planes of intellect are altogether supplanting the mental superiority, the statesmanship, the conservative elevation of reason and influence which distinguished our own country in years agone! Young men were then abundant who led cleanly lives and brought physical soundness to the wives they married and the children born of them. Now it is the rash vogue for venturesome youths by scores and hundreds, also for men who should manifest better sense, to troll the murky way to orgies of physical and moral defilement, to subsequently contaminate the bodies of unsuspecting young women whom they marry, and to entangle shadowed homes with the prey of taints that impair the quality of nutritive process, and, of later years, feed tainted blood to the knives of surgeons who relatively fatten by the pitiful dismemberment of unfortunate womanhood. What types of offspring can be expected to proceed from contaminated reproductive conditions? When men and women are ill, we doctor their gonorrheas, their syphilitic sores, their spotty eruptions, their oozing vaginas, their catarrhal wombs, their pussy ovaries; but our tentative remedials do not extend to the diseases of their personality, the defections of their wills, the degeneracy of their moral perceptions, their

despairful outcry at the mockery of illfate. The renewals of life to such as these perpetuate for the time, rather than outgrow, the vital hurt that perverts the fountains of existence. We doctors may ambitiously scud around to plan and arrange fresh air resorts for their trailing scourge of tubercular degeneration, but we have not timely seen to it that the blood cells were defensively regenerated hourly and daily by the vitalizing aeration in the antecedent life by which a superior status of manhood and womanhood might have blessed the needy world because of more sanitary sense and judgment.

It is in such conditions and relations that we perceive how nearly the influences of environment dominate the quality of physical and mental makeup and output of population. The propensities are too often the rotten fruit of uncomely or unsanitary situation, the unsanitary imbuement of existence, the evolution of unsanitary nutrition as the reflex of mal-organization in the renewals of life. A discerning physician can with his practicable knowledge, note critically the household arrangements for cooking and heating, the sleeping room plans with regard to ventilation, the drainage and water closet conditions, the area of space outside the house, the overcrowded unhealthy neighborhood, in order to impress to attention of tenants the necessity for greater purity of air to be inhaled. We never can shirk the fact of nature's eternal law of life and its hourly renewal. These people who are on the wrong side of nutrition and of will action need to be taught that on the degree of purity or impurity of the air breathed must depend the resulting degree of purity or impurity of the blood through which is carried on and established the quality of life's constructive cells and brain functions by which the exercise of will is possible. An aggregation of unsanitary dwellings in degenerate location constitutes slums. And what is the type of mental and moral qualities developed in slum environment? All is diseased—habit of thought, of will, of action, ambition, purpose. Hotbeds of cupidity, envy, intemperance, sensuality, criminality, disease of body and morals, always imply the development of unhealthy state of brain and mentality. It is easier for many to sink to the lower level than to rise to the higher level of habit. As humanitarians we may not, while there is hope, neglect to urge individuals and families to remove from objectionable locations to some neighborhood promotive of substantial sanitation of life.

Roundly speaking, the "will" and the "won't" rule in the affairs of self-stewardship. A weak fluctuating will relative to reasonable conclusions indicates a degree of morbid impairment or deficiency of vital activity. Impotence of the will is usually incidental to conditions rather than to voluntary acceptance. Doctors should become will-trainers as verily as prescribers of materia medica. They should teach themselves to diagnose causes beyond the personal demonstrations of clients. A will that has feeble clasp of the better purpose and action, needs more than a verbal dictation—it requires a physiological backing in the personal organization. This means again that the nutritive quality and habit must be changed and improved to elevate the status of mental operation. Of course the aid of training assists to bring into practical activity the faculty of volition desired. A strong will, if healthy in its tone and morals, regulates its compass by the light of common sense. But a will merely stubborn, capricious, strenuously whimsical, should not be diagnosed as a strong or healthy will. It is fanatical, hysterical, unreasonable, hence diseased. It is jangling repulsive chains of imprisoned self-consciousness in mental darkness, from which the liberation of transforming uplift of molecular nutrition to brain and spinal cord would directly reclaim the victim of priggish obstinacy to the open arena of consistent reason. A fretful child, an habitually petulant man or woman, a plotter of injurv to others are usually found among the underfed, the cravers for consolations of comforting nutrition by which the renewal of life's processes may mellow and exalt the physical sensations, the mental outlook, the will function. Sanitary nutritive reinforcement will prove more substantial as a reformer of the diseased and wicked will, than do eloquence, sermons and exhortations. It is the physician's higher province to try to lift the unholy incubus of nature's brooding penalties, which quench the joy of living, from fellow creatures who go stumbling ahead on folly's highway that leads to deceptive gains and shortened lives.

Where will we begin with each case? Certainly not with lectures to the diseased on lines of psychological or metaphysical deductions, that muddle the simple grasp of common sense. The erring do not need fringes of ethics—they need the plain food of beneficial results. Mental errancy of emotions and ambitions will more readily assume normal equipoise if we improve the reconstructive pabulum of the renewals of life that can rationalise the perceptions and conclusions of enlightened will-power and course of conduct. Elevate the nervous balance through substantial nutrition and renovation, and the foolhardy excesses and strains and moral perversions that shorten life's opportunities for service and comforts will subside to better reason.

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INFECTIONS OF UNKNOWN OR DOUBTFUL ORIGIN.

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WE are quite justified in inferring, by analogy, regarding those diseases manifestly infectious, in which an essential or specific cause has not yet been found, that such an organism will for each of these be eventually isolated. It is an unjustified opprobrium on the part of the laity that our profession has not yet accomplished these discoveries. Certainly there is no lack of energy or genius to that end. Among the reasons why the germ origin in the case of every infection has not yet been discovered, is the fact of the amazing minuteness of these organisms. Only of recent years have microscopes been perfected sufficiently powerful to detect objects so infinitesimal. Nevertheless, although we do not know the germs, we do know

almost everything else about these infections—their incubation, their mode of onset, their characteristic eruption, and all the rest. The indefiniteness of the bacterial origin of the infections here considered makes the prophylaxis against them all the more difficult and necessarily indefinite in nature. Immediately the typhoid bacillus was discovered, it was easy to frame a rational and scientific prophylaxis against the disease; the same was also the case regarding the tubercle bacillus, the cholera vibrio, the plasmodium and the other discovered specific bases of their respective diseases, of which we do not now stand in the dread which is born of lack of knowledge. We must therefore for the present class the exanthemata, as also parotitis and pertussis, among the distinctly contagious disease against which a quarantine more or less rigorous is to be established. The contact may be direct, as by kissing, or by implantation upon diseased upper air passages (nares, pharynx or tonsils), or through abrasions in the skin or (it would seem) even through the unbroken skin. Or the contagion may be indirect as from contact with furniture, tapestry, rugs, carpets, bed sheets and the like (fomites) which may have been worn or otherwise used by the sufferer from a contagious disease. One of the earliest incentives, I believe, to medical inspection in the public schools of New York City, arose from the circumstance of a little girl returning to her class before having fully recovered from scarlet fever. She distributed among her admiring and envious playmates the scales which were "peeling" from her skin. She was a very kindly disposed and impartial little girl and took care that no one would be slighted in the distribution; the result was a scarlet fever epidemic of unusually robust proportions. The exanthemata may be conveyed in letters, or in vehicles or public conveyances may become impregnated with them. No doubt insects, such as flies, propagate them. In the following seriatim consideration of these infections I have no idea to be exhaustive; I but submit observations which may be found, I hope, of practical value.

The incubation period of measles is characterized toward its close by such prodromes as cough, vomiting and coryza. The disease sets in with these symptoms and with a chill and high fever and with conjunctivitis, lachrymation, photophobia. The familiar exanthem appears on the third or fourth day after the invasion, with marked temperature elevation; spots like flea bites (but without the central hemorrhagic point characteristic of the bites which such insects as fleas or bedbugs). The arrangement is crescentic, somewhat raised, like wheels, dull red, beginning on the forehead and descending, the color being brightest upon the parts exposed, on the sixth day the fever begins to decline, when brawny desquamation sets in. These scales are very infectious.

The laity do not look upon measles as particularly serious; oftentimes all they want of us is to make the diagnosis; if we continue our visits through several days they suspect we design to run up a bill on them. But we know that measles has some serious consequences and some still more serious sequelae. Hemorrhages in the skin, conjunctivitis, middle ear suppuration leading possibly to meningitis, croup, bronchitis and pneumonia. Streptococcus infection must be feared. And I have come, in my own field, to look upon measles in children as a very decided predisposition to tuberculosis.

While writing of the prodromes in this disease I could not help but recall the instructive experience of a colleague; I think the reader will agree with me he is entitled to sympathy. He was called one evening to see a child of six that had that afternoon been taken down with a high fever and with nothing much very indicative of a severe state of things except a clean tongue. He had had a most exhausting day, and was in a condition when all his faculties were not well in hand. He expressed the opinion to the parents that the child was suffering from some such infection as measles; that no doubt a rash would in due course appear; that he would be in again the followig morning. In the meantime he prescribed the usual eliminative and anodyne treatment. At two that night he was aroused from bed and required to come at once to the case. He then found the child in the extremest agony with the opisthotonos, etc., of cerebrospinal meningitis. Next afternoon death mercifully ended the case. We know full well how little any of us could have done under these circumstances (this was before the evolution of Flexner's serum); nevertheless those parents could not then nor would they to-day, I believe, forgive our colleague for his mistaken diagnosis. It was their first born which, they declared, had been sacrificed to his inefficiency; and there certainly could have been little more heartrending than the dreadful death of this beautiful boy. It is indeed a hard calling, that which we are practicing. In every phase of human endeavor the very best men are constantly making mistake; and in all human enterprises allowance is always made and excuses are always accepted for this inevitable factor. But elsewhere than with us it is not human life (the most precious thing in the cosmos) which is lost by reason of error; we are fallible, as are all other men, and must each of us sometimes make mistakes. And for these we may have to meet unrelenting and quite unforgiving reproach.

Rubeola, Rotheln or German measles is a mild infection lasting two or three days. The fever is slight, there may be conjunctivitis with slight catarrhs. There is a red macular eruption, in patches like measles but beginning on the back and chest and subsequently becoming diffuse, like scarlet fever. There is no desquamation. The clinical similarities between this disease and measles are great; but the two diseases are no doubt distinct, because an attac kof rotheln does not leave an immunity against measles.

In scarlet fever there are also prodromes the most constant of which is vomiting. The invasion comes with a chill and a rapidly rising temperature; the symptoms point oftentimes to profound general infection. The throat and tonsils are inflamed, occasioning difficulty in swallowing. The lingual papillae are prominent and give rise to the so-called strawberry tongue. There is severe headache. On the second day of the invasion the eruption appears on

the face and neck (the chin escaping) at first as small, disseminated red spots, later becoming confluent and presenting a scarlet hue, which is brightest on the covered parts (the chest and back) to which the eruption descends. After the fourth day the fever gradually declines. Desquamation occurs in shreds or large sheets and continues for from fine to fifteen days.

In scarlet fever we have to fear such complications as acute nephritis with consequent hemorrhage from these organs, often fatal diphtheria, otitis media, endocarditis, encephalitis (inflammation in the brain tissue), articular rheumatism, glandular abscesses and the like. These concomitants or sequelae are chiefly due to the mixed infection, especially the streptococcus, which makes the condition so serious.

It is possible that certain protozoon bodies described by Mallory may be essential etiological factors in scarlet fever. He found them in the skin of four cases, and divided them in two groups, one of which, quotes Ricketts, consisted of "round, oval, elongated, lobulated bodies," from 2 to 7 microns in diameter; whilst the individuals of the second group "contain a central round body, about which are grouped, on optical section, from 10 to 18 narrow segments which, in some cases, are united, but in others are sharply separated laterally from each other." They occur within and between the epithelial cells and in the superficial part of the corium. Mallory calls these bodies cyclastic scarlatinatis; they are, in his belief, protozoa and have a causative relation to scarlet fever, but he does not claim to have proved such a relation. Possibly this will eventually be found the case.

The contagiousness of scarlet fever is intense. The skin of the patient undoubtedly throws off the virus; no doubt also it reaches the air surrounding the patient from his respiratory passages by means of "drop infection" for transmission may occur before the skin is involved. Infection may continue a month to six weeks after the appearance of the eruption. Epidemics seem to have occurred through the medium of milk.

Here, as in the exanthemata generally, the patient should be isolated until the desquamation is complete; there are antiseptic baths or ointments or vigorous soap frictions; there is antiseptic treatment of the oval cavity; all the patient's utensils, linen and the like—everything with which he has come in contact—are disinfected; we avoid stirring up the dust in the room; there must be moist and not dry cleaning; the deadly feather duster is banished; the sputum and other discharges of the patient are disinfected; there is plenty of fresh air and sunshine in the room, which is disinfected, when the case is completed. Physicians and nurses wear long gowns which are put on before entering the sick room and discarded on leaving.

Variola (smallpox) may have prodromes continuing for two or three days. The invasion is ushered in by chill, high fever and evidences of general infection ;there are pains in the sacral region, erythema and pimple-like spots. The characteristic eruption follows in from four to nine days, appearing upon the face, the body and also upon the mucous membranes, especially of the mouth. It regularly appears at first as red spots, that soon become elevated into small "shotty" nodules. These in turn are transformed on the sixth day of the eruption into umbilicated vesicles (the summits of the vesicles are depressed); on the eighth day these nodules become pustules, around which on the ninth day a halo forms; on the twelfth day there is exudation followed by crusting. Sometimes these "discrete" nodules becomes confluent and then the eruption assumes dreadful proportions. During the suppurating stage (from the eighth to the twelfth day) the temperature is very high, and is of the septic, suppurative, hectic type, being quite irregular in its manifestations, and following no definite course as in typhoid fever or malaria. There is perhaps metastatic suppuration. In the stage of crusting or dessication the pustules discharge their contents and dry up, while the fever gradually declines. Decrustation goes on for from four to six days, leaving cicatrices at first bluish pink, but subsequently becoming snow-white. During the disease pain in head and back, vomiting and delirium are customary symptoms. We must fear in this disease such complications as abscess-formation, gangrene of the skin, diseases of the eye and ear, pneumonia, nephritis and myelitis.

In hemorrhagic variola, hemorrhage takes place into the pustules, the skin and the mucous membranes. This is the severest and usually a fatal form, and is known as black smallpox.

Vaccinia, which is the result of vaccination, has an etiology akin to that of smallpox; this must be so, considers Ricketts, despite our uncertainty as to the exact nature of the virus. "To hold a different view would be to acknowledge that immunization with one kind of microbe may confer immunity of the strongest and most specific character against another, a condition for which we could find no parallel." Various bacilli and cocci have been described as causing vaccinia and smallpox; but no conclusive evidence has been forthcoming with regard to any of them.

The existence of a "contagious zone" of air about the patient would suggest that invasion takes place through the respiratory passages. We do not, however, know very much about how the virus is excreted or disseminated. Osler considers it to exist in the secretions and excretions and in the exhalations from the lung and skin. If we may judge by the analogous presence of the typhoid bacillus in the petechiae, the smallpox virus exists probably in the eruption. The dried epithelial cells which are continually thrown off are no doubt a most important means of dissemination. Fomites may transmit the disease, as in the other exanthemata. "Epidemiologic experience teaches that the virus is one of great resistance and tenacity. The infection is in all likelihood systemic. The dermal lesions are probably of embolic character, which presupposes blood infection; transmission of the disease through the placenta is decisive proof of a general distribution of the virus at some stage of the process. The intoxication of smallpox is manifestly general. Secondary infection plays a great and generally a most grave part

in smallpox, the pustular lesions usually contain pyogenic bacteria, the streptococci being often more prevalent than the staphylococci. The former almost always found in the fatal cases; Councilman believes they are more important as a cause of death than the specific virus. And this is so in all likelihood. (In tuberculosis, for example, the tubercle bacillus is not so much to be feared as the "mixed infections" in which the streptococci play so dire a role.)

Successful prophylaxis requires universal vaccination; and to this all agree, physicians and layman alike, at least all whose lives are ordered by a sober and wholesome common sense. It is by this means that we now for the most part know smallpox only as a ghastly memory; few of us to-day ever see such cases. But a century ago, before the epochal and most beneficent discovery of Jenner, whole towns and cities were decimated and villages were swept out of existence by this disease; every one in three one would meet upon the thoroughfares would be a pock-marked survivor. To-day, on the other hand, we would set down a pock-marked face as a very special mark of identification.

Varicella or chickenpox is a mildly infectious disease occurring almost exclusively in children. Small vesicles appear in irregular order upon the skin of the scalp and face and upon the mucus membrane of the mouth and pharynx. These vesicles replace previous red spots and dry up in the course of a few days. There are generally no serious symptoms; nephritis and otitis media may occur as sequelae. Sometimes ineradicable cicatrices remain upon the face. The eruption sometimes resembles that of smallpox. The disease is both epidemic and sporadic; the virus probably exists in the lesions of the skin and in the scales, possibly the latter is the chief source of contagion. The infection atrium is probably in the lower or in the upper respiratory tract. Isolation is essential as also disinfection; the child should not return to school until desquamation is complete. In delicate and tuberculous children, with consequent lowered tissue vitality, the lesions may become gangreous. There may be hemorrhagic varicella. The disease may occur in adults.

Epidemic parotitis or mumps is a mildly infectious disease occurring usually in children. The parotid gland, and sometimes also the submaxillary glands become painfully swollen, though generally without suppuration. The attack lasts several days. A really serious factor in this disease is the occasional metastatic inflammation of the testicles or the ovaries; sometimes as a result the functional activity of one, or very rarely both, these organs in either six is impaired or wholly arrested so that atrophy may result. The disease is epidemic in children, particularly in schools, in other institutions, and in soldiers confined in barracks. It is endemic in large centres of population. The spring and autumn are the more frequent periods for its development. The virus is no doubt disseminated from the upper respiratory passages with infected sputum and saliva. Besides the ovaries and the testes we must fear involvement of the female breast in adult life. Possibly we may have albuminuria, convulsions, acute uremia, endocarditis and peripheral neuritis—even fatal meningitis. Ricketts mentions a peculiar form of parotitis following injury of the abdominal and pelvic viscera, the "post-operative" parotitis. The parotid glands may also be invaded by a number of known germs such as the pneumococcus; serious lesions are probably due to mixed streptococcus infection.

Pertussis or whooping cough is a common infectious disease among children and it is justly feared on account of its long duration and its complications and sequelae, such as bronchitis, pneumonia, tuberculosis, anemia, emphysema and hemorrhage into the conjunctiva. There is the catarrhal stage, which lasts from several days to several weeks; here there are cough and mild febrile symptoms. There then follows the spasmodic stage which occupies from four to six weeks. There are the familiar paroxysms of cough of a peculiar whooping character (deep, strictulous inspiration, with a short expiratory cough).

I think that pertussis is a serious disease; it oftentimes predisposes to tuberculosis. And when (it is not rarely the case) old people contract it, the strain upon the system is very apt to shorten life.

Various protozoa and bacteria have been assigned as the cause, with not much justification. Ricketts, however, considers an influenza-like bacillus which has been found in the sputum of patients with great constancy and by many competent investigators. Sprengler observed it first in 1897; it is somewhat larger and thicker than the true influenza bacillus, but has the same bipolar staining affinity and the same demand for hemoglobin for its growth in pure cultures; culturally it cannot be differentiated from the influenza bacillus. This germ, being inoculated in the throat of an adult (not believed to have had whooping cough) a distinct febrile reaction lasting two or three days was developed after an incubation period of two days; headache and pharyngitis (which latter continued four weeks) accompanied the reaction. There was little cough; and it was concluded that, though it had shown toxic and infective properties, it had not produced whooping cough. This bacillus proliferates enormously in the pharynx and nose; and was still cultivated after four weeks. It may be this germ stands in the same relation to pertussis as the streptococcus does to scarlet fever; it is moreover found in other diseases—measles, influenza, meningitis, bronchitis, varicella and in normal throats.

In all probability the virus of pertussis is disseminated by coughing, by kissing, by the common use of eating utensils. Some believe pertussis to be contagious only during the catarrhal stage; we had best take no such chances. It is often epidemic; and more common in cities (where contact infection is the more probable) than in rural districts.

Typhus or spotted fever is a disease now happily rare. It used to be mistaken for typhoid. After the incubation the temperature rises quickly to a high degree, with a feeling of coldness. The fever will continue in the neighborhood of 104 degrees F. There will be vomiting, with nervous disturbances and delirium. The spleen will be enlarged. About the fourth or fifth day of the invasion irregular rounded, pinkish blotches becoming darker (the "mulberry"

rash) will appear upon the arms, legs and trunk. This eruption will remain about a week. Oftentimes the eruption will become transformed into petechial (small purplish spots) which may be the seats of minute hemorrhages. This disease has a very high mortality rate.

One must welcome the time when the specific or essential cause in all these infections of unknown origin will be discovered and isolated, because this will tend to adequate means of immunization. Of course it is not absolutely essential to know the given germ; we do not know it in smallpox, for instance, yet our means of immunization are here well nigh perfect. But with the knowledge we shall achieve in the case of each disease, our prophylactic and curative measures will certainly be put upon a firmer and more scientific basis.

APPENDICITIS-PYOSALPINX, A CASE ILLUSTRATING THE PRINCIPLES OF THE NEW ERA OF SURGERY.*

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THIS girl, 19 years of age, was sent to the hospital yesterday with an acute attack of appendicitis of 48 hours' duration. She gives a history of three or four somewhat similar attacks during the past year.

On examination I found last night a rise of temperature of about 2 degrees, somewhat rigid abdominal walls, and tenderness at McBurney's point. The peculiar interest in the case centers upon the fact that on vaginal examination I found also distinct evidences of an old pyosalpinx of both sides. A very nice point in diagnosis is to be made in consequence.

I have been demonstrating before the class for some time the general fact that when we have either acute or chronic appendicitis there is hyperaesthesia of the right group or lumbar ganglia about 1½ inches to the right of the navel, and there is no tenderness of the lumbar ganglia of the left side. When we have hyperaesthesia of the lumbar ganglia of the left side and not of the right, we are to look to the sigmoid region for the source of irritation. When the lumbar ganglia on both right and left sides are hypersensitive we are to look to the pelvis for the source of irritation.

In this particular case, with double pyosalpinx undoubtedly present, how can these points be of service if appendicitis also is suspected? I found that the right group of lumbar ganglia showed very much more sensitiveness than the left group, so that it became a comparative matter, but I confess that the case is one that puts these new diagnostic points severely on trial.

The incision will be made in the middle line just above the pubes because we certainly shall have to deal with the pyosalpinx. In women the appendix can usually be reached very easily through this median incision. With the scissors an incision is made through skin and fat, then the external sheath of the rectus muscles, and the latter are split without cutting, by opening the scissors in situ. Transversalis aponeurosis is opened in the same way and we are down to the peritoneum. Pressure upon the peritoneum with the finger shows that there are no adhesions at just this point, so the peritoneum is stabbed with scissors which are opened in situ and we are in the peritoneal cavity. A considerable amount of reddish peritoneal fluid escapes.

In cases of this sort I suspect there is a little more danger from sepsis because the lymph current is toward the peritoneal cavity instead of wholly away from it, but it may change at once as a result of the operation.

Here are two very greatly distended pus tubes firmly adherent to all surrounding structures. The right mass is shelled out first and much pus escapes in the pelvis from rupture of the wall of the tube. The house surgeon here applies a trick of great value. With his closed fist he presses upon the abdomen at the level of the navel and keeps his fist there while I am at work. This will insure the flow of pus along the line of least resistance to the surface and avoid unnecessary spreading of pus in the peritoneal cavity; for while we care very little about that, it is just as well to use all reasonable safeguards nevertheless.

The ovary has undergone such destruction that it is a question if it is worth saving, but we will shell out the left tube and ovary first and try to save the one which is best. Large quantities of pus escape as adhesions are separated about the left tube, but as this is the better ovary of two, I shall save this one and sacrifice the right one. The tubes are ligated with small catgut near the cornu of the uterus. This will become absorbed in two or three days and the lumens of the tubes will open. This may possibly allow of pregnancy some time in the future, but it is more likely to be extra uterine pregnancy. The chief object in sparing the ovary is to avoid precipitating the menopause in a girl nineteen years of age.

If we were dealing with the pyosalpinx feature of this case alone, I would hardly stop to wash or wipe out any of the pus although it has flowed freely over the peritoneum of the pelvis and has bathed the wound of the abdominal wall. As we are to examine the appendix, however, I will pour enough salt solution into the pelvis to float out a good deal of the pus and some clots of blood, the house surgeon keeping his fist pressed upon the abdomen all the while. The appendix is next brought into the wound and it is seen to be distended and congested. It is quite remarkable that we should have an acute inflammation of the appendix with a pyosalpinx, but I do not know that there is any cause and effect relationship. Appendicitis is, I believe, caused by anything which leads to swelling of the inner soft coats of the appendix within the tight outer sheath; compression anaemia of the inner coats follows this strangulation and bacteria at once attack the anaemic area. It makes little difference how the swelling of the inner coats of the appendix begins, and may be from any one of half a dozen causes. The important point, I believe, resting simply in the fact of strangulation of the swelling of soft inner coats within the tight outer sheath.

*Report of Clinic given at Post Graduate Hospital, Nov. 28th 1908. Dictated by Dr. R. T. Morris.

The base of the appendix is ligated with simple catgut, the appendix is severed, the base touched with carbolic acid neutralized by alcohol in one-half minute, and the alcohol washed away with salt solution. Simple ligation of the appendix suffices and we can put aside fanciful methods of treatment of the stump which I employed for years, until the studies of Seelig and others showed that simple ligation sufficed.

Upon opening the appendix we find that it is distended with blood, soft faecal matter and a faecal concretion, and here at one point is a patch of acute ulceration extending through the mucosa. The diagnosis then which was made by the physician who sent in the case was quite right, although he had to recognize appendicitis in the presence of an old double pyosalpinx. The abdominal incision is closed with the exception of an opening about as big as a lead pencil for a small wick drain which extends from the pelvis to the surface. This wick drain will be left in place for four or five days.

The essential point in the treatment will consist in changing the external dressing of gauze every half hour for the first few hours in order to bring into action the principle of capillarity which will suck out all of the pelvic fluids very rapidly. You know that I have taken no pains to get all of the pus out of the pelvis and have not spent time in wiping or otherwise making the toilet of the peritoneum. Every move has been made with the idea of saving time, but yet without hurry. Hurry in operating is to be avoided, but expeditious operating which makes every move count and which allows such an operation as this to be completed in less than twenty minutes is desirable. It would be better if the operation could be done in five minutes, for the new era in surgery includes the idea of leaving the patient with her natural resistance unimpaired. She is to manufacture phagocytes and opsonins and to manage the infection largely herself. We have simply turned the tide of battle between the phagocytes and bacteria. She has had the advantage of a short period of anaesthesia. The incision was small, I avoided handling bowel, and confined the work to structures which needed direct attention. By observing these precautions the patient has been left in first rate general physical condition. She remains a good factory for the manufacture of her phagocytes and opsonins. If we had done very conscientious work in making the toilet of the peritoneum, if we had spent a long time in separating the adhesions, in picking up all bleeding points and in avoiding the spreading of pus in the peritoneal cavity, we would have damaged her by the violence of our efforts. We would have prevented the factory from immediately taking up this function of manufacturing phagocytes and opsonins enough for subsequent management of the case.

Now I wish you all to keep track of this patient's subsequent history. I think you will find that tomorrow there is no sign of peritonitis, that she is very comfortable indeed for such a case, and that she has started in immediately to make recuperation. Please note that no rubber gloves were worn at the operation because they would have interfered with the nice sense of touch necessary in quick work and nice work in saparating the adhesions. I have worn no mouth guard or cap, and it would have been quite as well if I washed my hands after operation instead of before.

If the case had been one of pinning a loose semilunar cartilage of the knee joint I would have worn rubber gloves, gauze mouth protector and a cap. The time has come for us to make intelligent distinction between cases and to recognize the requirements according to the light of our new era. The first era of surgery in the days of Hippocrates was the heroic era.

The second era of surgery was the anatomic era, in the days of Vesalius.

The third era of surgery was introduced by Pasteur and Lister and may be called the pathologic era. In the pathologic era we were taught to remove all products of infection, no matter at what cost to the patient.

The fourth or new era may be called the physiologic era of surgery; it is now just beginning to dawn, and is based upon the studies of Metchnikoff in phagocytes and of Wright in opsonins. The basic idea of removing all products of infection by our art of the pathologic era is to be dropped in favor of retaining such natural resistance on the part of the patient that phagocytes and opsonins can be manufactured immediately by the patient.

I do not believe that any man can step into the light of the physiologic era until he has mastered the science of the pathologic era and is prepared to apply it, as far as essential without interfering with the principles of the physiologic era.

616 Madison Ave., New York City.

COLLES FRACTURE; WITH A NEW THEORY OF ITS MECHANISM.

Dr. Leonard W. Ely defines Colles fracture (Jour. A. M. A., June 27) as a fracture of the lower three-quarter inch of the radius. He says that it is almost invariably caused by a fall on the extended hand, because the hand must necessarily be in extension to transmit the blow to the radius. Any other position is impossible. The outer part of the radius usually suffers more than the inner because the latter is protected by its attachment to the ulnar. The reason for the greater damage to the posterior portion of the bone is that the radius here is of a right-angled triangular shape with the hypotheneuse forward and the apex backward. The thin apex suffers more than the broad base when a crushing force is applied longitudinally on a line parallel to the hypotheneuse, and midway between it and the apex. The chief points in the diagnosis in the order of importance are: 1, sensitiveness to pressure at seat of fracture; 2, history of a fall on the hand; 3, disability; 4, deformity. Of these, sensitiveness is by far the most important. Crepitus and false point of motion are rarely present. Ecchymosis is found in a fair proportion of cases.

As to treatment, the main indication is to break up the impaction; the next thing is to hold the fragments in their proper position. All varieties of splints are mere details. Probably one is almost as good as the other. The treatment laid down by the writer

is simple and easy to carry out, and gives uniformly excellent results. It consists in first breaking up the impaction thoroughly under ether, and second applying a plaster of Paris gauntlet, slit up on the radial side, from the elbow to the metacarpo-phalangeal joints. The plaster remains on for two or three weeks. The claim is made that immobilization never causes ankylosis. If accurate adjustment has been secured, the result will be good. Original drawings accompany the article.

Creosote Treatment.—Dr. Beverly Robinson, who is an authority on the subject, insists upon the use of pure creosote internally as well as by inhalation. Dr. Robinson has also shown and emphasized the important fact that there are many patients who will improve more when they take the combined treatment. These are patients who at the beginning of treatment can only use the inhaler for a short time, and infrequent, or who never are able to use it sufficiently, as he believes, for one reason or another. The following formula has long been used by Dr. Robinson:

℞ Creosote gtt. vi (Merck's).
Glycerine (best) ℥i.
Best rye whiskey ℥ii.

M. Sig. A dessertspoonful 4, 6, 8 times in 24 hours, and rarely every 2 hours and very infrequently more than 6 drops, or minims, in 24 hours. Sometimes he finds his formula unsuited to his case, then he varies it with a combination in which there is pepsin, or perhaps with lime with hydrochloric acid.

Dr. Robinson says there are patients who for a time become intolerant of inhalations, so they have to be modified or diminished in strength, and perhaps suspended for a while, until the stomach recovers, then inhalations can be resumed with distinct relief. He says our prescriptions must be mixed with brains, and we must study closely the personal idiosyncracy of the patient to obtain the best results. A great mistake of many is, he says, to give creosote in too large doses or not properly combined or diluted.

The Physical Signs of Early Tuberculosis.—Whipple (Albany Med. Ann., Sept., 1908), finds that while inspection may often give decided information, we glean little from it in incipient tuberculosis. The phthisical chest, the diminished expansion, the red line along the gums, the yellow tongue (after exclusion of malaria), the mydriasis, dilitation of peripheral capillaries, diminished excursion of the diaphragm, club fingers and many other signs are of interest after diagnosis has been made from the more important facts. (These signs are, moreover, indicative of tuberculosis long past the incipient stage.) Percussion is of greater value to the expert than to the general practitioner; the art of percussion and the musical ear are necessary to detect the note slightly raised in pitch and the diminished resonance often observed in early apical tuberculosis. The possibility of recognizing these fine differences is with most of us; but through lack of experience the ability is wanting. (Nevertheless by reason of the importance of the subject, and that the incipient generally comes first to the general practitioner, the latter should attain this ability.) Auscultation is of the greatest value; the normal ratios in length and pitch of inspiration and expiration should be known so that any abnormality shall be appreciated. Higher pitched and roughened inspiration, and prolonged expiration, or simple diminished breathing are significant signs. Sales are most important; many times they are not heard, either because the listening ear is not educated or because they are not properly and carefully looked for. Whipple quotes Lawrason Brown: Make the patient cough; this cough should be a free, easy, expiratory cough as noiseless as possible and followed at once by a full, fairly rapid inspiration; "rales that can be heard in no other way are often so apparent after cough that diagnosis becomes child's play;" listen to both chests and compare vocal resonance and especially whispered resonance. Palpation and mensuration seldom give important data in incipient cases. In many incipients there are no physical signs; but most failures in examination are due to non-recognition of existing physical signs. Mistakes in diagnosis are inexcusable; not so ignorance in diagnosis.

The International Tuberculosis Exposition at Washington—The Action of Diffused Light Upon Bacillus Tuberculosis.—J. Weinzirl, of Washington, has shown that by making direct exposures (without the intervention of media which absorb the light) that non-sporebearing bacteria—including the tubercle bacillus—are killed by direct sunlight in a remarkably short time, generally between two and ten minutes. It is desirable to take advantage of the new method to test likewise the action of diffuse light upon bacteria, and especially upon B. tuberculosis. Much has been written regarding the importance of light in dwellings, which must of necessity be largely diffuse light; but we have thus far no satisfactory data on which to base conclusions concerning such light. Weinzirl has found much variation in the powers of resistance shown by different species of bacteria. The B. prodigiosus is killed by diffuse light within a day, whilst controls kept in the dark have lasted five or six days; on the other hand Str. Erysipelatus showed strong endurance, five to nine days of continuous exposure being required to kill it, whilst controls enclosed twelve days and night have lived even longer. Other bacteria tested presented intermediate degrees of resistance. B. tuberculosis was always killed within a week, the shortest time being within twenty-four hours; controls grew for a longer time, but never after ten days. It was thought that dessication would be the most serious disturbing factor, wherefore other controls were placed in moist chambers and exposed to diffuse light; almost invariably these latter controls were killed in a shorter time than the first cultures controlled. The problem is thus complex; but it is certain that diffuse light materially shortens the life of the tubercle bacillus, destroying it within a week.

Caesarean section is strongly advocated by R. Jardine (Brit. Med. Jour., Sept. 19, 1908), in preference to other methods of delivery in cases of contracted pelvis, especially when the former procedure can be done under favorable circumstances; a very early examination is essential in order that the presence or absence of any contraction or other abnormality of the pelvis may be learned.

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SALUTATORY—1909.

IT is with much gratification that we greet our colleagues at this benignant season—gratification, indeed, all the more hearty by reason of the achievements in medicine during the year just past, and of the unusual anticipations which may now be reasonably entertained.

Science has lost, among others, two great men: Lord Kelvin, whose work in the realm of physics and chemistry was epochal; and Dr. Harrington, of Boston, whose achievements in prophylaxis and sanitary science were of equal value to humanity. We have on the other hand to congratulate ourselves upon the visit of Dr. Koch and many other notable European physicians to our country; as also on the fact that Dr. Gorgas, whose labors have made possible the building of the Panama canal, will this summer assume the presidency of the American Medical Association, which Dr. Burrill is now so ably filling.

The tuberculosis situation to-day is such as would have astounded physicians but a generation ago. Then a cure of consumption was one of the rarest of medical phenomena; now we would expect to do considerably more for a case of incipient tuberculosis than we could for one of parenchymatous nephritis or of cirrhosis. We cure even fairly advanced cases of tuberculosis nowadays. There will probably never again, certainly ont in our era, be seen such a stupendous exhibition as that which is now to be seen at the American Museum of Natural History in this city, which exhibition has been transferred from the earlier International Tuberculosis Congress in Washington; probably never again will this be seen, we believe, for the reason that it will probably never again be needed. For, if the present propaganda expands in the progression naturally to be expected, our little children will, before they reach their prime, find this disease as rare as smallpox is to-day. That this is not an idle or a fatuous dream, is patent if we but compare the tuberculosis outlook to-day with that of smallpox in Jenner's time. Who then would have believed that smallpox could be made practically extinct; yet such is the smallpox status to-day. And that so also will that of tuberculosis be, several decades hence, we make no doubt.

With regard to typhoid fever, also; we shall certainly in the near future find this disease extremely rare. The prophylaxis against it is indeed simple enough, even a Hottentot could grasp its fundamental principles. All that now remains is an appeal to the saving common sense and the political courage of our people; it is, we imagine, the latter which will be the more difficult to move. That cholera and the bubonic plague have not penetrated our shores is due solely to the scientific wisdom and the energy of our coast medical officers. A notable advance has been in the understanding of the intermediary role which insects, especially flies, fleas and mosquitoes, play in the spread of infections. We may hope for some beneficent developments in our knowledge of cancer; we have at any rate concluded (such is our opinion) that among all the remedial means proposed for this dreadful disease, the early use of the knife still remains the surest.

A monumental advance in therapeutics has been the evolution of Dr. Flexner's anti-meningitic serum. The whole subject of serum therapy continues to occupy the minds and the devoted energies of both our clinicians and our laboratory workers; and it is within these lines that very great therapeutic achievements are to be hoped for. Here at least is an absolutely scientific and logical therapeutic means, the lack of which has hitherto been a depressing opprobrium of our profession.

Our medical institutions continue to develop and to increase mightily; even now they have assumed marvelous proportions. And several gifts of millions to them have in the last twelvemonth been made.

One of the most notable of the medical events of the past year has been the arranging of a course in Sanitary Science and Public Health at Cornell University, under the combined auspices of the New York State Department of Health, and that magnificent University. In other institutions this example will certainly be followed. All scientific hygienists agree upon the enormous importance of this step; for only by the education of local health officers and of the public in general can the health of the body politic, and especially its freedom from dire infec-

tions, be preserved.

There has been the spice of certain little vagaries, such as therapeutic nihilism, mental healing fads and the race long disputes for and against the use of alcohol; but these things furnish the condiments which give zest to the feast of good things medical.

Our death rates continue to be lowered; it would seem indeed we shall all of us soon be like the oyster which (it is said) has no diseases; it is either healthy or dead. (We should judge, from rarely occasional mishap during the enjoyment of this delicious bivalve, that when it is dead it is very dead indeed). Dr. Woods Hutchinson recently considered, in a most diverting way, how time was when we were always sure of a large practice from typhoid in the autumn, pneumonia in the winter and grippe in the spring; of such revenues sanitary science has now bereft us, whilst race suicide has deprived us of what was formerly a comfortable obstetrical income. However a whole lot of people will continue to get sick and to require our services; for it is human nature (and we might as well take advantage of the fact) to disregard all hygienic laws until the degree has been reached when our services become absolutely essential.

A very Happy and Prosperous New Year, then, to all our friends; and may we assure them of an earnest purpose to set forth (as we and our editorial forbears have done through nearly four decades past) much to inform and instruct them, the newer and vital and essential principles of our science and art as they are forthcoming; to record such methods of treatment as medical genius will continue to devise; to entertain our readers; to invite their correspondence and co-operation; to join with them, to the extreme of our abilities and our cordial willingness, in mutual efforts for the health, the wholesome living and the happiness of our fellow-beings, who will look to us for relief and guidance in the best means of exacting the most that is good and beneficent in and on and above this dear old earth of ours.

TUBERCULOSIS IN THE FUTURE.

IT is a truly amazing contrast—that which is presented by the tuberculosis of the past and that which is manifest in the tuberculosis situation to-day. Heretofore this disease has been destroying every third or fourth human life, and sometimes every other life, in its most important and productive period; nor are any less impressive the suffering, the anguish among survivors and the stupendous economic losses connected by this statement. Such has been the tuberculosis in the past. For the other side of the contrast let us consider how remarkably within recent years has the tuberculosis mortality been cut down; in Prussia forty per cent.; in Boston, Mass., and in New York City, close on fifty per cent. Several years ago Bulstrode declared the object of preventive medicine to be "to curtail and if possible, to prevent disease, to prolong existence and to render life happier by means of improved physical conditions;" he now invites us to consider what such sentiments have wrought. In the year 1838 tuberculosis destroyed in England and Wales nearly 60,000 lives; in 1906, though the population within these borders has vastly increased, this disease destroyed less than 40,000 lives. The tuberculosis death rate in these countries in 1906 about equalled the decrease observed in the preceding three decades; wherefore Bulstrode expresses the belief that, should the decrease in its mortality rate continue in the same ratio, consumption should disappear totally from England and Wales within the coming thirty or forty years. Whilst Flick in Philadelphia expresses the judgment that if the anti-tuberculosis fight now waging gathers natural and normal force as it goes along this disease should in from fifteen to twenty years be stamped out in all the large centers of population.

The reflection is therefore justified that those among us who are in middle life may before we become venerable see at least the beginning of the end in the fight against the Great White Plague. We may indeed entertain the confident hope that before our little children have grown to adolescence consumption will have been bereft of most of the terrors which have been attending it; that before they in their turn are a-graying, they will think of tuberculosis, as we to-day do of smallpox or leprosy.

On the light of such observations as these our colleagues who have visited the magnificent International Tuberculosis Exhibition in the American Museum of Natural History must have felt a most wholesome pride and satisfaction in the achievements of such men as Pasteur, Koch, Bodington, Brehmer, Dettweiler and Trudeau, and of the host of their earnest coworkers, who have established the therapy by which the marvelous change in the tuberculosis situation has been and is being wrought. Another thing which must greatly have impressed them is the fact that the anti-tuberculosis propaganda is not only and solely a doctor's concern. Medical science has been since Pasteur, and is to-day, the pillar of fire to lighten the way—to use the graphic simile of Casimir-Perier. But our present success has been achieved (and future success must depend also upon this), because all sorts and conditions of

men and women—the nurse, the artisan, the tradesman, the laborer, the builder, the contractor, the political economist, the statesman, the humanitarian, the churchman have each and every one realized how many and how varied are factors concerned in the tuberculosis situation, apart from the specific cause; because all have worked faithfully with us for the introduction of our modern science of sanitation into every phase of the infinitely complex civilization of our times.

DUST AND GERMS.

TYNDALL* observed that solar light, in passing through a dark room reveals its track by illuminating the dust floating in the air; and he quoted Daniel Culverwell: "The sun discovers atomes, though they be insensible by candle light, and makes them dance naked in his beams." In his researches on the decomposition of vapors by light, Tyndall was compelled to remove these "atomes" and this dust. It was essential that the space containing the vapors should contain no visible thing, that no substance capable of scattering the light in the slightest sensible degree should, to begin with, be found in the experiment tube traversed by the luminous beam. He wsa for a long time troubled by the appearance in this experiment tube of floating dust which, though invisible in diffuse daylight, was at once revealed by a powerfully condensed electric beam. Two test tubes (other than the experiment tube), were placed in succession in the path of the air: the one containing fragments of glass wetted with concentrated sulphuric acid; the other, fragments of marble wetted with a strong solution of caustic potash. The dust passed through both these fluids thus prepared, in these test-tubes. The air of the Royal Institute, passed at a rate sufficiently slow to dry it, and to remove its carbonic acid, carried nevertheless into the experiment tube a considerable amount of mechanically suspended matter, which was illuminated by the beam of light passing through the latter. Prior to the admission of the air the exhausted experiment tube was optically empty; it contained nothing competent to scatter the light. But after the air has bubbled up through the sulphuric acid and potash solutions, and had thereupon entered the experiment tube, the conical track of the electric beam was clearly revealed. This was a daily observation in October 1868, the time of Tyndall's research. He tried in various ways to intercept this floating matter. On one occasion, prior to sending the air through the drying apparatus, he carefully permitted it to pass over the tip of a flame of a spirit lamp; whereupon the floating matter no longer appeared in the experiment tube. It had been burned up by the flame; and was therefore of organic matter. Compare now with these brilliant scientific operations any one of a number of findings made to day; as for instance, that of Jackson,** who by means of a microscope much more powerful than any Tyndall could have had at his disposal, differentiated in street dust: "stone dust plaster, iron-rust and cement from building operations; dirt from excavations, or from loosely constructed carts; ashes, house-sweepings and dried garbage blown from barrels and cans; chimney soot and cinder from industrial plants; excrement of horses, dogs, and other animals; dried sputum of individuals possibly having tuberculosis, bronchitis, nasopharyngeal catarrh or pneumonia in its first stages." We have today quite definitely reached the conclusion (as if it were some new idea), that much disease, especially of an infectious nature, is due to impurities in the air we breathe; of which fact more certain proof can not be had than this experimental work begun in another generation and having now its adequate and perfect sequel in this.

Tyndall himself could not have reached the conclusion that is thus forthcoming; for science had not in his day attained the evolutionary stage to make complete demonstration possible. But he had the sure intuitions of genius, sure because they were based upon correct sense-perception and were made up of judgments upon the data at hand in his time. Thus he observed (and the unsuspecting reader might imagine the quotation to be taken from a Journal of the present day): "The air of our London rooms is loaded with this organic dust, nor is the country air free from its presence." Ordinary daylight, he resumed, might disguise this fact; but a sufficiently powerful beam of light causes dust suspended in the air to appear almost as a semi-solid. "Nobody could without repugnance place the mouth at the illuminated focus of the electric beam and inhale the thickly massed dust there revealed. Nor is this repugnance abolished by the thought that, although we do not see the floating particles, we are taking them into our lungs every hour and minute of our lives."

Consider also Tyndall's wise deductions. Lister was then demonstrating antisepsis; and had noted how in simple fracture of a rib, where the pulmonary pleura had been torn and where blood had flown into the pleural cavity, there had nevertheless been no putrefaction, as was so often the case with wounds

*Tyndall, John: Fragments of Science (D. Appleton & Co.).

**Jackson, D. D.: Sources of the Contamination of the Air in New York City. Long Id. Med. Jour., Jan., 1908.

exposed to the air. Why? Because, concluded Tyndall, the air is filtered by the upper respiratory passages, one of the offices of which is to arrest inhaled particles of dust, and to prevent their entering the air-cells. And may not those who to-day are declaring that pulmonary infection in tuberculosis is not by direct transmission into the alveoli turn to Tyndall for confirmation of their views.

Tyndall's scientific acumen was well shown in his early approbation of Pasteur's work. The latter's exposition of the microbic origin of Pebrine, the silkworm disease, was given to the world in 1865, and was of course violently opposed; for the spontaneous generation men were very strong in those days (Lister also was with Pasteur, for it was on the former's comprehension of the germ theory that the principles of antisepsis were based). These men had not the exact knowledge of micro-organisms which science, working on the basis provided by Pasteur, has since gained. What we call bacteria Tyndall spoke of as "particulates;" and he realized well that these entities were not identical with molecules of unvitalized matter. With Pasteur he believed that these particulates were organic and had life; that they were self-multiplying; that, however minute they might be they must partake of the property of vital things to be differentiated into species, each propagating its own kind and none other. "If you sow wheat you do not get barley; if you sow smallpox you do not get scarlet fever; the matter of each contagious disease reproduces itself as rigidly as if it were dog or cat. Thus was he able to applaud Pasteur's pronouncement (which is to-day so mighty a watch word for us): "Il est au pouvoir de l'homme de faire disparaitre de la surface du globe toutes les maladies parasitaires; si, comme c'est ma conviction, la doctrine des generations spontanees est une chimere."

Truly there were giants in those days—Faraday, Tyndall, Darwin, Huxley, Spencer, Lister, Pasteur: it were well indeed for us to turn from time to time to the precious heritage they have left us, to their recorded works for inspiration, for education in the safest, sanest and most fruitful methods of science, and in order for the wholesome contemplation of the very highest order of genius among men.

Evolution's Semi-Centennial.—Nearly a thousand leading scientists, representing American educational institutions, will meet in Baltimore during the week of December 28 to celebrate the centenary of Charles Darwin and the semi-centenary of the first publication of the "Origin of Species." All the gentlemen are members of the American Association for the Advancement of Science, the annual meeting of which will be held in Johns Hopkins University.

A MESSAGE FROM THE ORIENT.

THE Orient is certainly a wonderful region; from it one may gather many curious things. A number of these are set forth by a gentleman with the euphonious name Tirumangalum Chrishna, in the book, "The Hindu-Aryan Theory on Evolution and Involution," which may be had of the Messrs. Funk and Wagnalls. For example: "In breathing a person in normal health commences to breathe through the right nostril at 6 a. m., and continues thus until 7.30 a. m.; this operation is what is called "Susya-Kola," or the "Sun Aspect." From 7.30 a. m. to 9 a. m., he breathes through the left nostril—the "Chandra-Kola" or the "Moon Aspect." Some changes occur when each of these Kalas is going on, as follows:

"For the first fifteen minutes the breath creeps out by the lower part of the nostril; for the second fifteen minutes it creeps out by the upper part of the nostril; for the third fifteen minutes it creeps out by the inner part of the nostril; for the fourth fifteen minutes it creeps out by the outer part of the nostril; for the fifth fifteen minutes it creeps out by the very centre of the nostril; and for the sixth fifteen minutes it creeps out by both the nostrils."

All these subdivisions have their appropriate titles, for which the reader must consult the book itself. We are not willing unduly to subject our compositors to the danger of incurring psychic abberations. We but note that the observation of these changes has led the author to the knowledge of the existence of the "Life Sustaining Body," which is blended with the physical body, just as butter is emulsified in fresh milk. By practicing the art of Raja-Yoga the "Life Sustaining Body" may be separated from the physical body. When so separated the former is not gaseous, "as it may become diluted with the gases in the atmosphere," but it is possible to do many wonderful things with it. "At first it looks like a misty mass without any distinct shape, and its natural appearance is of a phosphorescent character." In time the student of Raja-Yoga is able to give shape to this mass, and any likeness he may choose; it can be contracted and expanded at will. The individual who can do all this is very appropriately termed "A Man of Splender;" and according to the state of his practice he can remain in the separated "Life Sustaining Body" from a few hours to forty-five days. "He can use any other physical body as a medium if he wishes to perform any physical work on the spot, where he is at work "with his Life Sustaining Body alone, in a far away region." However this "Life Sustaining Body" is subject to danger in thunderstorms, "and therefore the students do not practice in the rainy and stormy

seasons. Such a body is not seen in the field of vision under the most powerful modern optical instruments." There are higher grades than that of "The Man of Splendor;" there is the "Resplendent Genius" who is "able to see the invisible world; it is possible moreover to attain "the Bliss." But for information how these things are done we must refer the reader to the book itself; it should be cheap at the price, considering the advantages to be gained.

What nonsense all this! But no more so than is to be found on any page of Science and Health, or among the writings of Madame Blavatsky, or in the advertisements of the psychic, or mental healers.

An Ocean Sanatorium for Consumptives, the British Medical Journal states, is being proposed. There is to be a sailing ship of 2,000 tons, for not more than fifty patients, each to be provided with a separate large and well-ventilated cabin. The deck would be used for the "veranda treatment. The intention is that the ship should cruise in the neighborhood of the canaries, where it would have the advantage of the trade winds and of a very equable climate, while a port would not be far distant in the event of bad weather. The ship would carry an adequate medical staff. The working of such a scheme, observes our contemporary, would be watched with sympathetic interest by the medical profession; "probably there would be no lack of patients if the terms were not prohibitive." Whilst there are cases to the contrary, the majority of coughs do badly in sea air; and when one adds to the dreadful disease tuberculosis the still worse disease seasickness, the "sympathetic interest" we would feel would be most intense in behalf of all such double sufferers.

Pullman Cars are to be investigated by Dr. Harvey W. Wiley, chief of the Chemistry Bureau of the Department of Agriculture at Washington, in which city great interest was aroused by the recent International Tuberculosis Exhibition. "We have taken samples of material breathed by the sleepers in these cars, and we are analyzing it to find out what it is. We don't know what it is; all we know is that it isn't air." Dr. Wiley believes thousands of cases of infectious disease without any discoverable source, are due to germs absorbed during railway travel;" outside of a laboratory it would be difficult to find a more congenial home and breeding place for microbes than the modern upholstered sleeping car. Whenever a door is opened or shut or any movement is made in the compartment clouds of dust are set in commotion and myriads of germs that had been lying dormant on the walls and floors start off on a new hunt for a more congenial habitat.

The house where Benamin Franklin first set up his lightning conductor at Passy has been handed over to the wreckers for demolition; it bore a plaque which recounted its association with the great physicist; this has been carefully removed and will be let into the wall of the new building which will take the place of the old.

BIBLIOGRAPHICAL

Surgery: Its Principles and Practice. In five volumes. By 66 eminent surgeons. Edited by W. W. Keen, M.D., LL.D., Hon. F.R.C.S., Eng. and Edin., Emeritus Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Phila. Volume IV. Octavo pp. 1194, with 560 text illustrations and 22 colored plates. Philadelphia and London: W. B. Saunders Company. 1908. Per volume, cloth, $7.00; half morocco, $8.00 net.

This superb work is rapidly nearing completion. The present volume is fully up to its predecessors in every respect. The subjects treated are hernia, rectum and anus, examination of urine, kidney, ureter, and the suprarenal gland, bladder, prostate, penis and urethra, scrotum, etc., intestines, ear, eye, military surgery, naval surgery, tropical surgery and influence of race, sex and age in surgical affections.

Each article is written by an expert selected by the Eminent Editor for fitness for the particular work with the result that the text is the very best that can be produced, concise, clear and up to date.

The illustrations are works of art, and answer their purpose perfectly.

We may justly say that this is one of the most practical, useful works on surgery that has ever been produced, thanks to Prof. Keen.

Vaccine Therapy and the Opsonic Method of Treatment. A short compendium for general practitioners, students and others. By R. W. Allen, M.D., B.S. (Lond.), late Pathologist to the Royal Eye Hospital; late Gull Student of Pathology Guy's Hospital. Second edition. Octavo pp. 244. $2.00. Philadelphia: P. Blakiston's Son & Co. 1908.

The progress of this new method has been so rapid that a second edition of this book has been demanded in less than a year. The changes are so great in the text, that the volume may be almost regarded as a new work.

The general practitioner of the present day must have a knowledge of this subject even if he does not practice it, and he can get it in no better way than by obtaining a copy of this book.

The text is plainly written, easily understood, and suited to any students.

The Arteries of the Gastro-Intestinal Tract with Inosculation Circle, Anatomy and Physiology, with Application in Treatment. By Byron Robinson, B.S., M.D. Professor of Gynecology and Diseases of the Abdominal Viscera in Chicago College of Medicine and Surgery, Consulting Surgeon to Mary Thompson Hospital for Women and Children, etc., etc. Large octavo pp. 222. Chicago: E. H. Colegrove. 1908. Price $1.50.

We must admit that it is beyond our ability to review such a work as this.

Perhaps it is best to quote from Dr. Thomas G. Atkinson's introduction a portion of what he says of it. "Byron Robinson is an anatomist. Probably no one man has made more original or valuable contributions to anatomical knowledge. The number and thoroughness of his autopsies are known and admired of all men. Yet no man has so clearly recognized or so consistently taught the functional signifi-

cance of his findings. Especially in those regions where his special work lies, the intestinal, urinary and genital tracts, has he reduced physiology to elementary principles, established an indisputable link between these elementary functions, and the higher functions of life, not only by his sound reasoning, but by the convincing logic of his post-mortem scalpel; deduced rational methods of treatment from these premises; and persistently raised his voice against the unwarranted violation of functional principles by irrational surgery.

"The more anatomy he explores and demonstrates, the more physiology he deduces and justifies. Every new structural discovery that he unearths he drags inexorably to the tribunal of physiology, to determine its functional value. This present work is dominated by this same far-seeing philosophy. 'Blood,' so Byron Robinson teaches, cures disease and prevents it. The significance of this truth was long ago recognized in respect of the cerebral circulation, and its structural vindication demonstrated in the circle of Willis. * * * These contributions of Byron Robinson to anatomy and physiology will always bear the eponyms that have been aptly applied to them."

The student of minute anatomy will find the work of great service. Our only criticism is of the carelessness of the proofreader.

The Cure of Tumors by Medicines with Especial Reference to the Cancer Nosodes. By John H. Clarke, M.D. 12mo. pp. 195. Price 2s. London: James Epps & Co., Limited. 1908.

This little book contains a description of the remedies used and a clinical report of some cases treated, with the results.

The drugs mentioned are not confined to the nosodes. Those who use treatment of this kind will find the book useful as a clinical guide.

On Infantilism from Chronic Intestinal Infection Characterized by the Over-growth and Persistence of Flora of the Nursling Period. A study of the Clinical Course, Bacteriology, Chemistry and Therapeutics of Arrested Development in Infancy. By C. A. Herter, M.D. Professor of Pharmacology and Therapeutics, Columbia University. 12mo. pp. 119. 90 cents. New York: The Macmillan Company. 1908.

This little volume is the result of several years of original investigation of a high order, and is based upon the report of five cases of intestinal infantilism which the author regards as typical. The affection is characterized by the overgrowth and persistence of bacterial flora belonging normally to the nursling period. Its chief manifestations are arrest in the development of the body; marked abdominal distension; anaemia; the rapid onset of physical and mental fatigue; irregularities of intestinal digestion, etc. The condition is not incompatible with a high degree of mental development. The book is well worth study.

The Exploits of a Physician Detective. By Geo. F. Butler, M.D. Professor and Dean of the Department of Therapeutics and Professor of Clinical Medicine, Chicago College of Medicine and Surgery. Author of "The Isle of Content," "Love and Its Affinity," etc. Octavo pp. 322. Chicago: Clinic Publishing Co. 1908.

This book contains a number of short stories, based upon facts in medical practice, which are not only interesting, but instructive.

Our readers cannot fail to enjoy reading them, as they are well told, and each one illustrates an important point.

Progressive Medicine, a quarterly digest edited by Hobart Amory Hare, M.D., and published by Lea & Febiger, of Philadelphia and New York, at $6.00 per annum, has been received for December, 1908.

The present issue contains diseases of the digestive tract and allied organs, the liver and pancreas, diseases of the kidneys, surgery of the extremities, tumors, surgery of the joints, shock, anesthesia and infections, genito-urinary diseases and practical therapeutic referendum. The expense of the book is well repaid by the seventy-five pages devoted to therapeutics.

We have often advised our readers to subscribe for this publication, which is only six dollars a year.

Brain Roofs and Porticos. A Physiological Study of Mind and Character. By Jessie Allen Fowler. Graduate of the Woman's Law Class of the New York University. Editor of the Phrenological Journal, etc. One hundred illustrations. Octavo pp. 148. New York: Fowler & Wells Co. 1908.

This is the first of a series of text-books which the author intends to produce on phrenology and kindred subjects.

It is undoubtedly the best book for the student who wishes to take up the subject.

The author's long experience and study especially fits her for this work.

Radium as an Internal Remedy Especially Exemplified in Cases of Skin Disease and Cancer. By John H. Clarke, M.D. 136 pages. Cloth, 2s. 6d. net. Postage, 2d. extra (America and Canada, 66 cents, post-free). The Homoeopathic Publishing Co., 12, Warwick Lane, London, E. C.

The Lesser Writings of C. M. F. von Boenninghausen. Compiled by Thomas Lindsley Bradford, M.D., author of "Life of Hahnemann," "Homoeopathic Bibliography," "Index of Provings," "Pioneers of Homoeopathy," etc., etc. Translated from the original German by Professor L. F. Tafel. 350 pages. 8vo. Cloth, $1.50. Postage, 15 cents. Philadelphia. Boericke & Tafel. 1908.

Viability of the Tubercle Bacillus.—M. J. Rosenau, of Washington, considered the life of the tubercle bacillus without the body; the absence of spores; the effect of waxy substances on the vitality; the difficulty of distinguishing between live and dead tubercle bacilli; the effect of dead tubercle bacilli in animals; the necessity of resorting to secondary inoculations. He found cultural methods to be inapplicable. The great discrepancy in experimental results is largely due to the failure to make secondary inoculations. The thermal death-point is well-established 60 degrees C. for twenty minutes or less. Rosenau contrasted the short life of cultures under most favorable conditions with the long life claimed for bacilli under favorable conditions; he discussed the inability of the tubercle bacillus in sputum, soil, water, etc.; and the effect of sunlight, dryness, chemicals, heat and decomposition. The subject is one of great practical importance.

CORRESPONDENCE

DAMP BANDAGES NOT FOR REDUCING TEMPERATURE IN TYPHOID.

To the Editor of the MEDICAL TIMES:

If Dr. Sawyer had attentively read my article on "The Needless Slaughter in Typhoid Fever," in November TIMES, he would have noted the distinct assertion that hydrotherapy was never employed for the purpose of directly downing the temperature—that is, by one skilled in the true theory of treating the disease, since the temperature is nature's "natural cure" for this and all other filth-diseases. Free from the outrage of forced-feeding and its inevitable blood-poisoning from putrescence, and with the ingestion of the little doses of moderately hot water, the filth is very soon eliminated and the temperature goes down of its own accord, so to say, being no longer required; and this, even without any water treatment externally. At the same time, appropriate use of the bandage (or the Brand bath, upon occasion) is mighty comforting and curative. It transpires that therapeutic fasting and maintaining the normal fluidity of the blood—for "the blood it is that 'cures'"—are the chief points in the rapidly curative treatment for typhoid fever and all acute diseases.

CHARLES E. PAGE, M.D.

Boston, Dec. 7, 1908.

RETROSPECTIVE

Altitude as a Factor in Typhoid Incidence.—In a previous article we have dwelt upon the paramount importance of contaminated water in the production of typhoid. While other means of distribution, as by dust, flies, vegetables manured with night soil, milk and prolonged proximity assume importance under certain circumstances, they do not seem to be important causes for the community at large and the methods of prophylaxis are so simple and so entirely within the limits which ordinary decency rather than sanitary science imposes, that what importance they do possess ought to be readily eliminated. Even ice made from contaminated water is not a marked factor of danger, since the initial freezing reduces the number of viable bacilli at least tenfold and probably on the average to 5 per cent. or less of the original number and since the sole factor of domestic economy postpones the use of ice by the great mass of the population for so long a time that nearly all of the typhoid bacilli must have died.

The relation between typhoid fever and water supply is important in a double way. Not only is water the chief means of conveying typhoid bacilli but typhoid is practically the only disease whose germs are conveyed to any appreciable degree by water. This statement requires qualification by acknowledging that cholera is similarly conveyed, but it is true for United States for the last two generations, at least.

This statement is important not only as an abstract scientific fact but from the engineering standpoint. While the ideal drinking water consists of pure H^2O plus a very slight addition of soluble salts, and while we may recommend boiled and cooled water for domestic use and may advocate the use of sand filtration or carefully policed water sheds for municipal supplies, the fact remains that, barring peculiar local chemical conditions, almost any natural water supply might be used for domestic purposes if we were free from typhoid fever and that no amount of contamination with sewage which would be at all tolerable or likely to occur under ordinary circumstances, would be of more than aesthetic detriment if typhoid fever could be stamped out. Even muddy water is perfectly wholesome unless peculiar conditions exist, and the writer has lately learned of a community of 1,500 persons, using Missouri River water that looks like weak cocoa, where only five cases have occurred in as many years and at least three of these were known to be imported.

A practical, experienced engineer states that it is accepted as an axiom that filtered water costs just about twice as much as unfiltered, and while it is obvious that the additional cost is well worth while, if it will free a city from typhoid, it is also obvious that this expense is to be avoided if typhoid can be rendered obsolete in other ways and that even the most approved system of sand filtration is liable to occasional lapses and that it can be applied only to communities of fair size. Paradoxically, a very bad water supply is better for a city than one that is only moderately contaminated, for if the quality of the water is notoriously bad, special precautions will be taken not only by families but by office buildings, schools, hotels, restaurants, etc. Another paradox is that the more carefully a municipal community is protected against typhoid, the more apt it will be to outbreaks which we can scarcely call epidemics, in portions of its population that go outside to drink contaminated water. This was well illustrated on a large scale during the Spanish-American war and is, of course, due to the fact that the maintenance of a good water supply for a considerable time diminishes the number of persons immunized by previous attacks or, possibly, by repeated partial infections.

Barring the comparatively small incidence of typhoid due to flies, contact, etc., the etiology and prophylaxis of typhoid may be represented by a succession of individuals at different altitudes, along natural lines of the flow of water, each depositing his excrement more or less directly into the water supply of the next. The man at the top of the hill or mountain need have no fear of his own water supply and the man at tidewater no compunctions as to discharging his excrement into the ocean when the tide ebbs. Just how typhoid fever started, brings up into a puzzle similar to the world-old one as to the chicken and the egg. It seems altogether likely that the typhoid bacillus evolved from the colon bacillus and undoubtedly after the appearance of man in the world, since it does not spontaneously affect the lower animals. Probably it did not evolve until some degree of crowding into communities occurred, and it certainly evolved later than the primary settlement of America by what has become the Indian race. Whether, if once stamped out typhoid fever would again develop is a question which it would be futile to argue. Probably not if reasonable precautions against drinking fairly concentrated sewage were maintained.

It will readily be seen that from the standpoint of

local selfishness, the problem of combatting typhoid fever depends upon guarding the water supply and that, broadly speaking, a better and cheaper method is to guard the excrement. For the immediate future, both methods should be employed, so far as practical and so far as indicated by local conditions. The recently discovered existence of immune, healthy breeders of typhoid bacilli, indicates that our attention cannot be concentrated entirely on actual patients, and yet such carriers are comparatively few—about three per cent. of series thus far examined—and it is altogether likely that if all dischargaes of typhoid patients could be carefully disinfected for a few years, the law of chance would render the bacilli-carriers a smaller and smaller factor in the propagation of the disease, so that it would soon become extinct.

Perhaps the first item of importance in the annihilation of typhoid fever is to impress upon the medical profession its paramount duty in regard to the disinfection of the excrement of the individual case. This duty becomes more and more important as we ascend the water courses. It is to the country doctor more than to any one else that we must appeal, both to limit local infection in his own community and to prevent the flow of infectious material into the water supplies of lower and larger communities.

Secondly, we must arouse public opinion to do away with the old common law regarding the right of drainage without reference to the health and right of down stream communities. This law is simply an expression of the principle of the Devil take the hindmost. Morally speaking, an individual or a community has no more right to discharge its excrement into the water supply of those farther down hill than it has to deposit it directly in a drinking cup.

The actual operation of an attempt to dispose decently of excrement and sewage is simplified by several scientific and practical facts. 1. The typhoid bacillus can not survive six months under any ordinary natural vicissitudes. 2. Neither the typhoid nor any other parasitic germ can live long in the presence of numerous saprophytes such as exist in a privy vault. 3. Filtration of sewage through a few feet even of fine sand or loam will render the effluent free of bacilli. 4. Wherever any considerable amount of semi-solid excrement, including city sewage, can be collected, its commercial value as fertilizer will nearly or quite pay for its separation and, as seen under the first heading, the use of such material is allowable for all slow growing crops. 5. Amounts of excrement and sewage too large to be left to the destructive action of septic vaults for a sufficient length of time and too small to pay for separation and sale as fertilizer, can be treated by chemical disinfectants without undue expense.

This qualification must, however, be made for all matters in which sanitary and economic interests clash. It often does not pay from a narrow selfish standpoint to be sanitary, so that there must be sufficient public interest in such matters either to compel the man up stream to look out for the interests of the man lower down, or the latter must for his own protection, do for the former what he ought to do himself as a matter of altruism or, better yet, both should get together and share the joint expense of sanitary improvements. In other words, all wells and water works, all privy vaults and sewerage systems should be under state control, with a reasonable degree of public assistance to secure proper conditions when the individual or community must expend an excessive amount to protect the health of others.

A concrete example may not be out of place. It would pay, in the narrowest, though not the shortest sighted commercial sense, for a village of a thousand inhabitants whose water supply is threatened by the privies of twenty farmers, to spend a hundred dollars on each, in order to provide a double set of cemented septic tanks so that the contents could be thoroughly decomposed and any disease germs destroyed by long contact with saprophytes, or to move the privy so as to provide for a hundred feet of filtration of its watery contents. Probably such a sum would be far in excess of the average necessary expense but it would amount to a per capita tax of only two dollars, it would have to be repeated for several years, even including repairs, and such a tax would be much less than the cost of even a moderate typhoid epidemic. The average typhoid case represents a loss of six weeks' wages, an equal expense for medical attendance, etc., and about every tenth case dies, necessitating a funeral which, on the average costs as much as the individual—or the head of his family—could earn in three months. This adds up to more than a quarter of a year's earnings, let us say $200. Two cases a year for such a village would come to more than the initial cost of reconstructing the privies on the water shed and their maintenance, for ten years.

Similarly, a city of 50 or a hundred thousand, might well afford to take up the trunk sewers of several small towns, at the points where they threatened to discharge into the water supply of the latter, and filter or chemically treat the sewage. But it is only in a very approximate way that population increases as altitude decreases and the problem is too vast to be treated by municipal units. We have already reached a period of development when travel and change of residence are common and no community can consider itself as fixed nor can it protect itself by purely local measures. It is not impossible that a man living high up stream may visit some place on a lower altitude and drink his own sewage. So, too, it probably often happens that a town regardless of the rights of its down-stream neighbors, may thus infect with typhoid a visitor from still higher up who, on his return home, carries vengeance to the former for its municipal sin. Thus the only safety lies in state or national control of the rights of all.

The salts of Epsom is the representative saline cathartic. It is the cathartic of its class par excellence. The milder salines, sodium phosphate, magnesium citrate, etc., usually need to be reinforced by some cholagogue remedy if a general systemic shaking up is desired. "Salts" is one of our best things in materia medica. A remedy whose internal administration will cause the dissipation of warts and dermal excrescences is not without considerable therapeutic possibilities. Whenever a "wringing out" of the mucous coat of the bowels is indicated salts accomplishes this in a way that no other remedy can. By this process of osmosis the water from the adjacent

tissues is abstracted resulting in the watery stool. All blood and lymph channels come in for their share of increased activity, even extending to the peripheral vessels and thus affecting the skin in some measure. Many ailments of obscure nature and remotely situated are benefited by saline treatment. Anemia, autotoxemia, oedemas and many types of indigestion give way to a course of "salts." "Salts" should not be given when there is an irritable intestinal mucosa. With "salts" and oil a physician ought to be able to practice medicine tolerably well if deprived of all other remedies. There are certain indications for each of these, the main difference in their action being that one is a systemic remedy and the other is for the most part simply a mechanical agent.

Before dismissing the subject of the old-time remedies I wish to say something of oil of turpentine. It is both a home and a homely remedy, but nevertheless has greater therapeutic worth than thousands of drugs in daily use. Turpentine is one of our very best intestinal antiseptics and agents for relieving meteorism, for which it may be employed both locally and internally. In intestinal hemorrhage or that of a passive character from any internal organs is relieved or modified by turpentine. It is contraindicated in hematuria and in hemorrhage of active character in plethoric subjects. The volatile and permeating quality of turpentine make it possible to in some measure reach every organ in the body. Casual handling of the bottle containing it will cause many people to have the characteristic odor in their urine in a few hours. Its local uses are too many and too common to mention. It is good for worms, sores, ulcers, nail-thrusts and numerous other conditions. Turpentine left in an open container or wide-mouthed bottle absorbs oxygen readily and becomes an ozonized oil. This oil is an antidote to phosphorous, converting the latter into an insoluble substance. The oil ozonized in the manner mentioned is more efficacious in the treatment of sores and wounds. Turpentine is a remedy for administration in either large or small doses. Large doses—an ounce and upwards—seldom produce strangury or other untoward symptoms because the purgative action is asserted and the drug is eliminated with a minimum of absorption. It is useless for "ladies in trouble" to drink turpentine in generous draughts with the idea that they are taking an abortifacient, for such action is seldom exerted more than results from any purgative. Several years ago the writer knew a girl on abortion-bent to take a half-pint, but the results were nil. Teaspoonful doses of turpentine would ordinarily produce more irritation than several times that amount, for the reasons already given. The dose is ordinarily from ten to twenty drops, but more than this is compatible with safety. Teaspoonful doses are powerfully stimulant to the vasomotor system. Many years ago when remedies were fewer than they are now the old-fashioned doctor gave his half-moribund patient a teaspoonful of turpentine with the result that the flagging heart and circulation were spurred to action, at least for the time being. Terebene and terpin hydrate are employed in the winter cough of old people and in recurrent bronchitis; also in other catarrhal affections of the respiratory passages and in catarrh of the genito-urinary tract.

Man, especially the American man, is never better satisfied than when he is trying to invent something by which he can save time and labor and do away with the humdrum and laborious methods of doing things. While the average man derives much pleasure from eating, it would be a source of satisfaction to many to know that in emergency they could swallow a tabloid or two and have aboard sufficient nourishment to tide themselves along until a convenient time for feeding presented itself. Others think that swallowing so much food with a maximum of "sawdust" and a minimum of nutrient material is a relic of a crude and primitive existence and that it puts too great a strain upon the digestive system. Everything but eating and nutrition have been improved, while these things go on in the old and tedious tenor of their way. Therefore the matter of **concentrated food** has had considerable attention the last few years. Concentrated food is wrong both in theory and practice unless man could by some process be made over and the greater portion of his 25 or 30 feet of intestinal canal be eliminated. All this canal is lined with little absorbent vessels whose hungry little mouths clamor for something to do as soon as food enters the stomach and the process of digestion is on. It may not be the correct thing for man to have so much greedy gut, but so long as it is there it must have something to do. Il all these little "suckers" are not given some material upon which to functionate they feed upon themselves in the poetic fashion of the millstone and the human heart which when they have nothing to grind must themselves be ground. Food must have bulk, this for several reasons: Volume is necessary from a mechanical standpoint to carry it to all parts of alimentary canal and to dilute it. If the food consisted entirely of a character ready for assimilation the absorbent vessels would be clogged, just as a waterwheel would refuse to turn in a sluice. Assimilation would be very much impeded by organic food constituents in a reduced form. Furthermore it is absolutely necessary that considerable residue be left behind in order to give volume to the feces and to create peristalsis. The bowels of most middle-aged people have become so accustomed to this stretching and dilatation from ordinary food ingestion that on a concentrated diet peristalsis would be very much impaired indeed. Man's alimentary canal is so constituted that he requires a mixed diet. The body is composed on the whole of only a few elements, but those are best furnished by a rather complex dietary. The nitrogenous and albuminoid substances are perhaps the most important in the digestive role, and these are supplied by both animal and vegetable food. The former furnishes it most abundantly and without a sufficient degree of "dilution." For this reason there is a tendency on the part of most people to eat more meat than is good for them. The nitrogenous elements are furnished in comparatively not anything like the free manner in which they are found in flesh; hence too great a task is put upon the digestive system to depend upon vegetables for the necessary amount of these elements. The hydrocarbons are necessary as oxidizers and are richly supplied by meats and are found in

considerable quantity in some vegetables and cereals. Nearly everything is good to eat, and if it does not furnish necessary elements its mechanical action is salutary in some manner. Milk, cream, oils, eggs, etc., are of value because they supply nutrient material in a manner easily assimilated. Bread, breakfast food and many kinds of vegetables do not give us much nutriment, but they act as carriers of more valuable pabulum and also act as comminuters and diluters. Man is a complex being and the more complex his bill-of-fare the greater are his achievements intellectually. Comparative physiology is unfair. The monkey may be able to live on a few nuts and berries, but man is endowed by a thinking and reasoning brain and probably has also an intangible something which we call the soul. The ape is not thus endowed. Neither is man fashioned after the horse or lion. He was made an omnivorous creature and it was a part of the great plan that he should partake of everything. Man has made the mistake of thinking his stomach is a great tank or receptacle into which he can throw any old thing regardless of quantity, time and manner. This sometimes gets him into trouble and fills his days with woe and hinders him from living out his allotted time.

The Ophthalmic and Cutaneous Diagnosis of Tuberculosis.—Wolff-Eisner, in a volume thus entitled, claims (how justly, we cannot say) that the credit of originating the ophthalmo-tuberculin test, which has generally been assigned Calmette, belongs in reality to himself; that he at any rate first suggested its clinical use. He seems to demonstrate his claim. Wolff-Eisner prefers the designation "conjunctival" to "ophthalmo-tuberculin" test, the latter term being used by Calmette. Wolff-Eisner recognizes the value of the subcutaneous tuberculin test, but thinks it not entirely devoid of danger, it is likely to produce severe general symptoms. The temperature must be carefully observed, for some days before and after the test, which cannot be given without certain apparatus for preparing dilutions; its field has moreover been somewhat limited; Wolff-Eisner finds all these disadvantages overcome in or diminished in the new tests detailed in his work. The technique of the cutaneous test: The skin is first rubbed with alcohol; the scarification need not be extensive—hardly more than a point; it may be made with any sharp instrument; von Pirquet uses his "Schaber;" a platinum instrument is an advantage, as being readily disinfected. There is, however, very little risk of infection; one should if possible not draw blood. We may scarify through a drop of tuberculin placed previously on the skin; or the latter may be applied after the scarification is made. A 25 per cent. solution of Koch's old tuberculin is used. Control vaccinations with sterile salt solution or with glycerine and carbolic acid solutions in the strength obtaining in the tuberculin (5 per cent.; 0.1 per cent.) should be made, preferably with a separate lancet; some individuals are greatly irritated by the slightest traumatism.

The technique of the conjunctival test: The patient's head is tipped well back; the under lid is supported for half a minute with the finger after the diluted tuberculin is dropped in the eye, which should not afterward be rubbed. A freshly prepared one per cent. solution of Koch's old tuberculin in 0.8 salt solution is used; one drop is placed in the eye with a small glass pipette or dropper. Wolff-Eisner does not consider necessary the use of the purified tuberculin prepared by Calmette; this solution—one per cent.—is too strong and may do harm. In a positive cutaneous reaction, a reddening appears after a few hours, usually reaching its highest intensity between th twelfth and twenty-fourth hour; it may be moderate, marked, or excessive, disappearing within two days or lasting for weeks; besides the hyperemia there may be exudation and infiltration, causing the formation of a palpable papule. In the positive conjunctival reaction this membrane will, after six to twenty-four hours, begin to redden; and in reactions of the mild grade nothing more is noticed; in reactions of the second grade the redness is more marked and there may be mucofibrinous exudate; in reactions of the third grade there are all the appearances of a severe conjunctivitis. When the reaction is very severe boric acid solutions, or a combination of three per cent. cocaine solution with a one-tenth adrenalin solution will relieve the discomfort. (In the first degree of the reaction no more than a redness of the conjunctiva is produced; in the second the redness is more intense and goes together with a fibrinous exudation of mucus; in the third degree all these symptoms are increased in intensity, whilst at the same time there occurs a softening of the conjunctiva and a serous infiltration—chemisos.) Wolff-Eisner has observed no unfavorable results from this conjunctival test; still, much care must be used. Ordinary conjunctivitis is not considered by him a contraindication. (We do, however, most decidedly believe so.) Tuberculosis of the eye is a contra-indication; but here the test would be unnecessary. Diseases of the uveal tract, present or past, are contraindications; and must be inquired for. In children there has sometimes been a lighting up of the phylyctenular conjunctivitis; this disease is almost always a scrofulous manifestation; scrofulous children are hypersusceptible to the toxins of the tubercle bacillus, wherefore in them only weak solutions should be used in making the test, if it is used at all.

Wolff-Eisner considers failure to react to either test, in cases of undoubted tuberculosis, to be an unfavorable diagnostic sign, indicating the organism's lack of capacity to react with its protective forces against the poisons of tuberculosis: he has found these incipient cases which have failed to react to do badly: a much larger portion of advanced progressive cases have failed to show reactions than those in the earlier stages. The time of the appearance of the reaction (especially the cutaneous) is considered of much prognostic value; a promptly appearing, severe reaction indicates a favorable prognosis. The more severe the reaction the better are the prospects of cure; a quickly recurring mild reaction or the failure to react suggests unfavorable prognosis; a delayed mild reaction indicates a healed or latent lesion. These principles apply also to the reactions from the hypodermatic tuberculin test. Von Pirquet, because of the frequency with which adults react to the cutaneous test, has considered its field of usefulness limited largely to the study of tubercu-

losis in children; Wolff-Eisner has found that many adults do not react to the cutaneous test, though a much larger proportion do than when the conjunctival test is employed. The cutaneous test reveals the presence of latent or healed tuberculosis; the conjunctival test shows the presence of more or less active lesions. The great value of the cutaneous test is its aid to prognosis; the conjunctival test is a much more valuable diagnostic procedure. Wolff-Eisner's theory of the mechanism of tuberculin reactions is as follows: Individuals with tuberculous lesions have. all the time, in their blood, bacteriolysins to the tubercle bacillus. (Bacteriolysis is the process in which bacteria are killed by serum; the bacteriolysin is the substance in the serum which accomplishes this; a bacterialytic serum not only kills, but it also dissolves the bacteria.) All tuberculins contain at least fragments ("splitter") of tubercl bacilli; when these come in contact with the patient's bacteriolysins, endotoxins are set free from these fragments of bacilli ("splitter") and cause the phenomena of the reaction. Analogous phenomena have been observed in the study of immunization to pallin in hay fever and in von Pirquet's study of the "serumkrankheit," as well as in the investigation of immunity in various infectious diseases. The frequency with which convalescent typhoid fever patients react to the conjunctival tuberculin test may be due to the superabundant production of bacteriolysins, so abundant that they affect not only the typhoid bacillus but other bacteria as well. Wolff-Eisner, in his most valuable and informing work, believes it is still too early to come to a final judgment as to the precise relative value of the various tuberculin tests.

Scarlet Fever.—C. G. Kerley (J. A. M. A., Oct. 24, 1908), has observed over five hundred cases. Transmission otherwise than by personal contact is unusual; nor will the unprotected contract scarlet fever, especially early in the disease, any more than they would contract measles or pertussis under like circumstances. The susceptible age is between the first and tenth year; infection under six months is very rare. The disease may be mild or very severe; the same character generally prevails throughout any given epidemic. The onset is usually sudden, with fever or sore throat; vomiting is less constant; severity usually corresponds with fever; over 104 degrees is a severe case, below 102 degrees is mild; the rash is also very variable and is simulated by that of many other diseases; the throat manifestations are the most constant and most important in the diagnoses. The desquamation is also variable and sometimes absent; it generally corresponds with the rash and the fever. Kerley has seen one case of second attack occurring six month after a mild one, and terminating fatally; the duration of active symptoms is usually from three to seven days in uncomplicated cases. In the first place we keep the child as comfortable as possible, allow plenty of fresh air, give a reduced diet, see that there is one bowel evacuation daily, give twice daily cool or lukewarm water sponge baths, according to the body temperature, and follow this by inunction with vaseline or cold cream. Daily inspection is made for complications; we watch the kidneys, the throat, the heart, the ears and the glands. All patients with pronounced angina are given chlorid of potash internally (3-4 gr. every 2 hours, not more than five doses in twenty-four hours) and hydrogen peroxid in sprays or gargles. Heart weakness calls for stimulation, the choice being between strychnine, strophanthus and digitalis. Alcohol is appropriate only to severely septic cases. Irrigations with warm salt solutions (120 degrees F.) are used for extensive throat involvement, with oedema, false membrane and sloughing. A certain amount of coughing during the irrigation is beneficial, loosening the pus and sloughing tissue. To prevent the development of adenitis the best means is the cold compress to the throat, which should be applied on the first sign of gland involvement and repeated at hour intervals. The pyrexia is treated on general principles and according to its degree; if it cause restlessness, loss of sleep and rapid heart action, sponging (one part alcohol, three parts of water at 80 degrees F.) or the cold pack should be used. The water is used first at a higher temperature, and is gradually reduced; by this means shock and fright are avoided. For the first hour or two in a pack the temperature is taken every half hour; and when this is reduced to 102 degrees F. the pack is discontinued to avoid too great reduction. If the rise is again rapid to 105 degrees or higher we had best keep the patient continuously in the pack. The temperature of the pack is seldom reduced below 70 degrees or 60 degrees if necessary. The degree of cold required to keep the temperature within safe limits is easily learned in each case; a very sudden reduction might cause collapse. In cases readily controlled the pack may be necessary for only half an hour or an hour at intervals of three or four hours; an ice bag to the head may be used with the pack to advantage.

The Hypodermic Treatment of Syphilis.—A. J. Gilmore (N. Y. State Jour. Med., Oct., 1908), relates how Hunter and Hebra first employed this method; they used the bichloride, and observed that syphilitic manifestations near the injection healed more rapidly. In 1864 Scarenzio used calomel injections; but this procedure was abandoned because it gave rise to abscesses and sloughing of the skin. Smirnoff in 1882 overcame these objections by deep injections into the subcutaneous tissues; and this led to deep muscular injections, the best medication of this kind. There is uncertainty in oral dosage, since we know very little about the amount absorbed by the gastro-intestinal tract, especially when pills or powders are given. There are numerous other objections. Inunction is especially valuable for its local effects on skin lesions, gummatous infiltrations, periostitis and ulcers; but here again there are many disadvantages. By the hypodermic needle medication is accurate, there is quick absorption, simplicity, cleanliness and control of the patient; we may avoid objections to the treatment by proper technique. We must be particularly careful not to enter veins; the syringe should be removed from the needle before injection and any flow of blood noted, to prevent this accident. The soluble mercurials appropriate for injection are the bichloride (gr. 1-24 to 1-4), the bicyanide (gr. 1-5 to 3-5), and the benzoin albuminate; the insoluble

preparations are calomel and the salicylate. Other salts have been discarded. Metallic mercury in the form of gray oil has also been used as in an emulsion. The syringe should be of glass and accurately graded; a long needle (No. 18 or 20) should be used and the wire, dipped in olive oil, kept in the needle to prevent rusting. The injection is either into the calf or the gluteal muscles, or between the scapulae. The insoluble salicylate of mercury is mixed with a ten per cent. oily medium, either of paraffin oil or liquid albolene. The powder is rubbed with the oil, the cork is tied in the bottle and the whole is sterilized by being subjected in an oven at 240 degrees F. for one-half hour. Rubbing the site of infection is helpful. The first dose should be small, so as to avoid risk of poisoning—5 minims of the 10 per cent. suspension or one-half grain of the salicylat; in one week give 10 minims; in another week 15, the usual dose for routine treatment. One and one-half grains are given each week for ten doses; then there is a month's rest, with a repetition of the course for one year, after which the intervals are lengthened during the second and third year. Patients are usually willing to carry out this method.

Women in Medicine.—It would seem that a large proportion of our professional sisters do not, when they get their degrees, hang out their shingles. The great development in research work of recent years has afforded many among them an important field of labor; in certain lines of investigation they have proved even more expert than we, especially when close attention to detail is demanded. Each year the research laboratories, both those maintained by private gifts and those connected with municipal and State health departments, absorb many young women medical graduates; they are very proficient in pathological and bacteriological work, like it, find it more and more absorbing as they continue at it and finally make it their life work. They oftentimes do important things in medicine; but they work unostentatiously and we hear but little of them because the institutions with which they are connected receive the credit for their labors. Their abilities are, however, most cordially recognized; and their male colleagues are quick to accord them the honor due them for the things they accomplish. Our great bodies, such as the American Association of Pathologists and Bacteriologists, the Pathological Society and the Academy of Medicine, have many women among their members. The services of Dr. S. Josephine Baker, states the New York Sun, are highly valued in the Department of Health of New York City; she is a member of the Academy of Medicine, of the National Association for the Study and Prevention of Tuberculosis and the American Medical Association. Dr. Anna S. Williams is the most able assistant director of the city's bacteriological laboratories. The latter lady has made an especial study of rabies, and is also a member of our most important societies. In the metropolitan research laboratory there are now nine women (practically the whole staff employed in this work) engaged as pathologists and bacteriologists. Seventeen of the twenty-five laboratory assistants in this division are now women; there are also many of our sister physicians in the vaccine, the chemical and the drug laboratories. Among the two hundred odd medical inspectors of the New York City Health Department, about twenty-five are women, and are at least as efficient as the male physicians.

Dr. Baker believes her sex to be particularly adapted for medical research work; they are painstaking, delighting in nice intricate work, such as requires manual deftness; they moreover go into this work more zealously, making it a career, whereas men take up research as incidental to practice. The Rockefeller Institute for Medical Research employs many women to do expert work; and an important share of the pathological work of the various hospitals is done by wohen. Dr. Martha Woolstein, pathologist of the Babies' Hospital and the Randalls Island infant hospital, has made for herself a most enviable reputation.

Self-Repair.—S. J. Meltzer (Am. Jour. Med. Sc., July, 1908), considers therapeutics the most important part of medicicine; the fact that the living organism is provided with means of self-repair does not relieve us of the duty to strive to discover, and also to provide, artificial means. Nature's store of reparative agents is insufficient, otherwise there would be no suffering and no premature deaths. The study of immunity means the study of the natural therapeutics of the body, with a view to employing these artificially and also improving upon it when possible. The new therapeutics has quickly taught us to improve upon the body's methods to provide with passive immunity when active immunity failed. The therapeutics based on this new lesson from nature has already attained great success, as in the use of the diphtheria antitoxin; and recent experimentation has established the practical efficiency of an active antiendotoxin, the serum for meningitis. Meltzer considers that the practical efficiency of the latter is as good as that of the diphtheria antitoxin, if not better. Thus the fact of spontaneous recovery of the organism from disease can be and has always been utilized with great profit in favor of scientific and practical therapeutics. The fact of spontaneous recovery has frequently been utilized as an argument against the use of any artificial treatment; and if the usefulness of any treatment was admitted it was that of physiological therapeutics (the improvement during disease of the conditions which the body requires during health). But there are other methods of treatment than these which may be designated as pathologic therapeutics (the employment of methods of treatment along the lines which the organism institutes during disease in its efforts of defense and self-repair). The latter promise to be the most efficient method.

Methods of Administering Ether.—Cunningham and Anderson (J. A. M. A., Nov. 7, 1908), find the drop method a very popular one. It is practically safe, while its simplicity makes it the method of choice for the inexperienced. Its shortcomings of perfection are sufficiently important to demand consideration. Modern anesthesia has already reached the stage where refinements of methods are necessary, when skilled anesthetists are available. That a method possesses no serious obstacles is not

enough. Modern surgeons and anesthetists demand a method of administering ether which overcomes certain minor and of too often neglected objections, which are of more or less importance regarding the safety and pleasantness of ether anesthesia. Hereafter general anesthesia will probably not be considered as a whole; but its various stages will be dealt with according to their obviously different requirements. This is to be accomplished by sequences of various anesthetics administered with an apparatus both accurate and practical, by men whose entire time is given to this branch of the profession.

Dr. Baccari, an Italian naval surgeon who spent four years in the Congo Free State on a scientific mission, has, as the result of his expedition, made some interesting observations. The natives are cannibals simply because they like human flesh; and they eat their fellow-creatures with the same indifference as we do animal food. A native who had been brought up by Europeans and taught to abstain from human food complained one day to the local magistrate that some natives had eaten the body of his father, who had died a few days before. "They have eaten it all themselves without giving a single piece to my family or even to me, who am his son;" and he asked for redress because he considered himself defrauded. The wars between different villages are undertaken mostly with the object of procuring human flesh; hence prisoners are never exchanged, but only fattened and slaughtered. The victims never complain (!) in fact many consider it a treat to be eaten, because before being killed they spend two or three months in idleness; and are well fed when others are obliged to work. The favorite way of cooking human flesh is in a sauce of pili-pili, that is, red peppers; but often it is smoked and kept to be eaten when food is scarce.

The Color Cure.—Two cottage buildings are being erected by the State of Illinois at the site of the Illinois Hospital for the Insane at Bartonville, at a cost of $100,000, and equipped with eight solariums for the work of phototherapy. Two of these solaria are equipped in ruby, two in violet, two in amber and two in opal; the incandescent lamps and the decorations of the walls are of these colors. The rooms are thus built for the purpose of testing the theory that the despondent insane are enlivened when placed in a red room, and violent patients are soothed in a blue room. Opal is considered to aid the consumptive.

The New Surgeon General.—Col. Geo. H. Torney, Medical Corps, has been chosen as the successor of Brig.-Gen. Robert M. O'Reilly, surgeon-general, who retires in January. Col. Torney has been much in favor with the Department by reason of his excellent work in San Francisco after the earthquake. The health conditions then existing in that city are considered to have been largely due to the work of Col. Torney and his associates. He is now chief surgeon of the Department of California, of high professional standing, and popular in the army. His time of expiration of active service for age will not expire until 1914.

Cupid's Trials in France.—It is reported that a young Parisian, having proposed to a Mlle. Eugenie, and having been accpted, the parents began collecting the mass of legal papers required for French marriages. An insurperable difficulty arose when the young lady's birth certificate stated her to be a boy. She is down in the register as a male and so, it appears, she must remain, in the law's decision. It seems to have been useless for her parents to point out that she is de facto a girl; that her Christian name of Eugenie entered in the register is feminine; and that if she had been a boy she would already have been called upon for the conscription, being of age. The inexorable authorities have decided these arguments to be of no legal and administrative value; and that the young lady continues to be de jure a boy. Of course love is finding a way. Legal machinery is being set in motion to establish the contention of Mlle. Eugene's parents. But administrative reports, no end of procedures and a court decision all at the expense of these good people, will be required to this end. It seems odd to us unsophisticated Americans that where there is so much red tape, there should be any difficulty about tying a knot.

Sciatica, states Pers (Deut. Med. Wochenschr., No. 29, 1908), must be attributed to perineuritis or its sequelae (adhesions); the detachment and liberation of the affected nerve are followed by an arrest of the inflammatory process, the pain subsiding as soon as the adhesions are broken up; persistence of the disease, continued severe pain, the inefficacy of treatment, the patient's individuality, are indications for operation; the results are practically constant, as compared with those obtained by any other method; the relapses (4.8 per cent.) must for the present be referred exclusively to the imperfect loosening and detachment of the adhesions. Pers has done neurolysis upon 47 patients having sciatica, in which operation the mode of incision permits the detaching of the adherent nerve with the finger from its surroundings. The nerve is grasped at its point of exit from the sciatic foramen, according to the method recommended by Baracz. The treatment does not end with the operation; massage must follow as soon as muscular pain begins to appear. The operation may have been done on patients having arthritis deformans when pain is complained of in the hip, for these pains are not necessarily dependent upon the arthritis, but may be the symptom of an associated affection of the sciatic nerve.

Youthful Suicides.—Youthful Bengalis are shockingly prone to kill themselves on the least provocation, states the Calcutta Empire. A boy, for example, is reprimanded by his parents because his studies don't show the advancement expected; he ends the whole trouble by swallowing opium. A girl wife takes a dislike to the second choice of her husband (how unreasonable is womankind); opium with like convenience does for her also. A girl wanted to go on a pilgrimage; her mother could not advance her the railway fare; whereupon she went out to a tree and hanged herself. Such are examples of what seems a common state of affairs.

A Wonder of Modern Surgery.—There was recently presented to the students of the Gottingen University Hospital a patient who had, in May last, fractured his spine in a fall. The bones of the vertebral column were reunited with aluminum wire and

the affected part straightened with a tube of the same metal. As the slightest shock might have proved fatal the patient was placed in a specially constructed bath and kept lying in water for four months, by the end of which time the injury had healed sufficiently to allow of his being removed to an ordinary bed. A metal bandage was then placed about his body, rendering movement impossible, but after another two months the patient, with the aid of a metal waistcoat, was able to walk. He has since been able to do light work and it is expected that so long as he wears his armor and escapes another fall or similar hurt he may live the allotted human span.

The Economic Value of Sanitation.—Dr. Geo. M. Kohn, of Washington, D. C., evidences that the decrease in the "vital assets" of the country through typhoid fever in a single year is more than $350,000,000. This disease is largely spread by polluted water, so that its death rate can be directly reduced by the purification of city drinking water. The increased value of the water to the city of Albany, New York, where the typhoid fever rate was reduced from 10.4 in 100,000 to 26 by an efficient infiltration plant, amounts to $475,000 a year, of which $300,000 may be considered a real increase to that city's vital assets. The average annual death rate from typhoid in cities with contaminated water supplies was reduced from 69.4 per 100,000 to 19.8 by the substitution of pure water supplies.

Centenarians.—Mrs. Sally Morse recently celebrated her one hundredth birthday in Brooklyn, despite the fact that in former years she was a nurse for the sick. The effect of this strenuous profession was, however, no doubt counteracted by the soothing and regular life one leads in Brooklyn. Mrs. Decker, died recently in Seneca Falls, New York, aged nearly one hundred and ten; a daughter of Godfrey Reals, who served in the Continental Army during the Revolution, she was married three times, the last time in her one hundred and second year to a youngster of sixty-two named Charles Decker.

Dr. Augustus Le Plongeon, an extensive South American explorer, died recently in Brooklyn. He was born in the Isle of Jersey in 1826; his father was a commodore of the French Navy and a member of the old French family of De Tocqueville; after having attained his medical degree in France he went to South America, where he practiced for many years. Becoming interested in the ancient history of the South Americans he began a series of tours with his wife over Peru, Yucatan and Mexico. He wrote two authoritative works on the peoples of Peru: "Queen Moo and the Egyptian Sphinx" and "Sacred Mysteries Among the Mayas and the Quiches." He made a number of plaster casts for the Museum of Natural History in New York City.

Experimental parotitis.—I. C. Herb (J. A. M. A., Aug. 22, 1908), isolated a large diplococcus from a case of mumps, which corresponded essentially to the organism isolated from this disease by other investigations. Inoculation of suspensions of this diplococcus into Steno's duct in the monkey and in the dog produce an acute uniform enlargement of the parotid gland accompanied with some slight fever and a distinct leucocytosis, the increase being largely in the mononuclears.

Congenital Malformation and Congenital Syphilis.—E. Grafenberg (Deut. Med. Wochen., Sept. 10, 1908), believes that the demonstration of the spirocheta pallida as the cause of syphilis goes to prove congenital malformations are not dependent upon this disease. In some cases of hydrocephalus and ascites spirochete have been found in the tissues responsible for the condition; not all cases, however, of congenital hydrocephalus and ascites are due to syphilis; in examining tissues in other malformations no spirochete were found.

Malingering and Functional Paresis of the Lower Extremities.—F. Hoover reports a new sign: A hemiplegic or normal person when asked to lift one foot when lying in the dorsal position will press the other foot against the couch. The malingerer's normal leg will not be pressed against the couch but will be limp. This absolute lack of complemental opposition from the normal leg has been invariably present in all of Hoover's cases of hysterical paralysis.

Venesection, declares Doland, has fallen into unjustified disuse. It is especially indicated in cases of valvular disease with right-sided dilitation; in well-marked myocardial degeneration it is useless. It may relieve pain in cases of aneurism of the arch of the aorta; in croupous pneumonia it is often of great value when the right heart is dilated. A weak radial pulse does not contra-indicate venesection; it is on the contrary a good indication for its practice.

Paraffine in Hernia.—C. C. Miller (Cure of Rupture by Paraffin Injections) uses the following: White petrolatum and paraffin aa ℥viii. Melt together. Sterilize by standing the mixture in a covered container in a vessel of water which is also covered, the water to be kept boiling for half an hour. With the paraffin should be boiled a numberof test tubes, into each of which sufficient paraffin is poured for an injection; the test tube is then plugged with sterile cotton or cork. When the paraffin compound is to be used the test tube is heated. A softer mixture (white vaseline ℥viii, paraffin ℥ii) may be melted together as in the preceding formula.

Primary Opacity of the Cornea from the action of lime or other metallic caustics, can be cleared up by chemically dissolving the opaque tissues, states Guillery (Deut. Med. Woch.). The best measures for the purpose is a mixture of ammonium chloride and tartaric acid. This is applied to the cocainized eye, beginning with a four per cent. solution of ammonium chloride, to which from 0.02 to 0.1 per cent. of tartaric acid is added; the former can be increased to ten per cent. and more, but no more tartaric acid can be added.

Cancer from Earthworms?—This is the thesis set forth by Dr. H. D. Walker before the Buffalo Academy of Medicine. Dr. Walker believes that this is a parasite disease and that the common garden worm is the source of the specific parasite. Transmission to human beings, in his opinion, comes about through the worm's crawling over fresh vegetables which are afterward eaten. He would therefore have people

refrain from eating raw such vegetables as cabbage, celery, onions and lettuce. In a series of sixty experiments upon various animals (guinea pigs, mice and dogs) which were fed or injected with germs taken from earthworms, the development of tumors believed to contain cancer cells resulted in many cases.

Gastric Photography.—A Munich physician has invented an apparatus by means of which the stomach may be photographed. The camera is actually swallowed by the patient, upon which the interior of the organs is illuminated by a small electric lamp which forms a part of the apparatus. At the bottom of the camera is wound a photographic film twenty inches long, and a quarter inch wide. A cord is pulled which runs the film past the lens, the electric lamp is turned on and the impression made on the sensitive film. "The procedure is repeated until the requisite number of pictures has been taken."

A National Negro Anti-Tuberculosis Congress was held at Tuskegee, Ala., in December last. An anti-spitting campaign was then inaugurated. It was also decided to appeal to the railways to prevent expectoration in passenger coaches, and to prepare a plan for enlisting negro churches in all parts of America in the fight, in which all negro religious and secular newspapers and periodicals will be asked to join. This is a most gratifying movement, by reason of the staggering losses which the negro race has in the past century been suffering from consumption, every other adult member of this race having in many regions succumbed to it.

Room Disinfection.—W. B. McLaughlin (Med. Rec., July 18, 1908), submits a new and efficient method. He finds that the methods in use at present are objectionable because the gas used does not penetrate sufficiently to kill germs that are far from the surface of objects to be disinfected. This his own experiments have demonstrated. Large quantities of formalin poured upon the surface do not give off gas enough to cause penetration. McLaughlin has found, however, that a mixture of formalin and carbolic acid gives off gas that penetrates fabrics efficiently; he uses a mixture of 75 per cent. of a 40 per cent. formalin solution and 25 per cent. carbolic acid. Eight ounces are used for each 1,000 feet of air space, and the room is closed for twelve hours. A sheet saturated with the solution is hung in the room to be disinfected. The bacillus pyocaneus is killed through many layers of fabrics.

Deutschmann's Serum Against Infectious Diseases.—E. Caravia (Med. Rec., July 18, 1898), describes this product of the blood of animals that have been fed with increasing doses of sterile yeast. This is not a bactericidal nor an antitoxic serum, but a polyvalent serum neutralizing all kinds of germs. Its action is due to the formation in the animal blood of an as yet unknown substance, the result of a series of chemical reactions set up by the digestive apparatus of the animal. As long as health is normal this substance remains unaltered in the blood; but when resistance is impaired it comes into action. In apyretic affections the injection of 15 to 20 c.c. of the serum has no influence on temperature; in few, however, it causes gradual but steady fall of temperature. The serum is well borne; there may perhaps be an urticarial rash. It has been used successfully in acute tonsillitis, pneumonia, measles, scarlet fever, diphtheria, etc.

Maggots in the Ears and Nose.—F. A. Long (Western Med. Rev., Nov., 1908), relates how he was called to a little Scotchman, of thirty years, who had an unbearable headache. The reflector showed the deeper part of the auditory canal to be filled with a wriggling mass of maggots, by whose presence the drum was obscured. A few drops of chloroform were instilled, by which means the maggots were killed, but for five minutes thereafter the irritation from the chloroform was complained of. The ear was then syringed with warm water passed through a soft rubber ear syringe; 127 dead maggots were thus recovered. A few had passed through a perforation in the drum head; but all these appear to have been washed away in two subsequent sittings on the following days. The patient had previously had an occasional slight aural discharge for a great many years; and two days before, while ploughing, a fly had landed in his ear, but had immediately escaped. It would seem that the fly had thus deposited her ova in the pus bathed canal. The pain had been of a gnawing boring character, and had been accompanied by a roaring likened to the distant sound of the sea. In five days the patient seemed as well as ever. Long would judge from the dearth of literature on the subject, that such cases are very rare, at least in temperate climates. Evidently, however, an ozena or a purulent otitis media must present a fertile field for this condition to occur on a chance visit of a fly in "blow" time. Long reminds us of two cases described by M. A. Goldstein in October, 1900; in one of these 23 larvae of the blow fly were picked out in the other seven. The auditory canal had first been filled with a ten per cent. cocaine solution, and then with chloroform. In the tropics, and especially in the southern part of the United States the so-called Texas Screw-Fly or Screw-Worm occasionally afflicts the human subject. Some years ago a Texan "cattle man" became ill with what was at first considered nasal erysipelas; a few hours later, however, maggots were discovered in the nose. Chloroform injections were given; despite which live maggots continued to crawl out of the nose. The soft palate was eaten away; well marked symptoms of meningitis were developed, and death supervened. After death maggots escaped from the nostrils; no doubt they had invaded all the accessory sinuses and had possibly gone through the cribriform plate into the brain. The Texas screw-worm was here the factor, the vitality of which is such that they are but little affected by ordinary antiseptics and insecticides. Chloroform is the only effective agent.

Recoverable Laryngeal Tuberculosis.—W. E. Casselberry (N. Y. Med. Jour., Oct. 3, 1908), finds certain persons to acquire a natural resistance sufficient to arrest laryngeal tuberculosis—oftentimes such resistance as is only just short of the degree required for arrest. Tuberculosis hyperplasia in the larynx may undergo resolution; and unmistakable tuberculosis ulcers in this region do occasionally heal.

MISCELLANY

No Joke.—It has been reported that four persons who ate frankfurter sausages contracted hydrophobia.

The Chinese and Tuberculosis.—There is a movement well afoot for the treatment of this disease among the Chinese, a race dreadfully prone to it. This movement is approved by Wu Ting Fang, the Chinese Minister.

Race Suicide Upheld.—A goodly matron, during the perplexing business of engaging a servant, asked if the latter had had any experience in taking care of children. "No, ma'am; heretofore I've only worked for the best families."

The Periodic Acetonemia of Large Children, believes Hecker (Munch. Med. Woch., Sept. 1, 1908), is not an accidental disturbance; but a constitutional anomaly in the sense of an arrest of development and of the fat removing function.

Dr. Charles L. Dana, who has recently returned from a three months' visit to Europe, studied while in Italy a form of insanity prevalent in that country which results from eating corn meal in which a fungus growth has been ground with the grain.

A Fatal Practical Joke.—Some men of comic propensities scattered upon the floor of a saloon snuff of a particularly vicious nature; they greatly enjoyed the spectacle of the proprietor sneezing until the latter burst a blood vessel, emitted a gush of blood and presently dropped dead.

Pelvic Massage is Contra-indicated when there are acute inflammatory processes, the presence of Fallopian tubes, ovarian enlargements, cystic degeneration in either the ovaries or panovarium, and above all, the presence of pus in the pelvis. These conditions, states the Lancet-Clinic, are accepted, but sometimes no realized.

The ideal meal consists of bread, butter and cheese, declared Dr. J. E. Squire before the British National Health Society. "These foods contain all the elements necessary for the proper working of the body, and thus form a complete meal." Excellent and certainly delicious; but would not most of us find this rather monotonous as a steady diet?

A Fatal Kick.—An unfortunate gentleman, while attending a sick horse, was kicked in the face, so that six stitches were required for the resulting cut; "the horse, which was a valuable animal, died later from colic." This is akin to the incident immortalized by Olly Goldsmith, of the man who was bitten by a mad dog: "the dog died of the bite."

Child's Death Attributed to Morphine.—An eight-months-old infant was recently given epsom salts; the inquest showed conclusively, so it is reported, that its death, which followed, was caused by morphine contained in the supposed salts. On autopsy the brain was found congested, probably by reason of convulsions. The contents of the bottle from which the dose was taken being analyzed, were made up of morphine and water, but no salts.

Hydrocele.—Mohr (Munch. Med. Woch., Aug. 11, 1908), injects adrenalin in cases which for many reasons cannot be operated on and refill quickly after simple puncture; he finds that the sac fills more and more slowly after each injection. When he operates he prefers the method described by Klapp in 1904 to the older ones of Volkmann and von Bergmann; because it can be done under local anesthesia and because the after-treatment may be ambulent.

Sewage Disposal.—The Merchants' Association of New York City has issued an illustrated handbook entitled "The Battle of the Microbes," which gives a summary of the most advanced views on the sanitary disposal of sewage. The "battle" is described as being between beneficent bacteria and the disease bearing germs that flourish in sewers. The booklet is written in terms easily understandable by laymen and is being circulated in all parts of the country. Methods of disposal by means of sedimentation and septic tanks, by filtration beds and irrigation or "sewage farming" and the use of separate sewers for storm water and house drainage are considered.

A Remarkable Case.—Two years ago, so the lay press reports, a resident of Sayre, Penn., while gunning blew out the left lobe of his brain. He was using an old musket which exploded, pieces of steel entering above the left eye. In hospital fragments of bone were removed, but during four months "the left lobe drained through the hole despite all the surgeons could do to stop it;" the patient "was delirious until the lobe had gone, when, to the surprise of everybody, his condition became normal again." Recently, however, this injudicious gentleman went gunning again; this time he blew out the remainder of his brain, and death was, of course, instantaneous." We should rather have thought so.

Victorien Sardou was intended by his parents for the medical profession, but they were too poor to carry out their project. When they were no longer able to pay for his education he continued his studies by himself and so learned history, philosophy and medicine. During the days when he was a poor medical student he was adding to his scanty means by teaching Latin to some fellow students. He had already written at least three plays, which he hawked around Paris theatres. "But managers, with one exception, were too busy to see me or to read my plays. This gentleman condescended to read my plays and to pronounce them rubbish. A few years later I had no difficulty whatever in disposing of all three without having altered a line."

The Flexner Anti-Serum is of great value in epidemic cerebrospinal meningitis states C. H. Dunn (Arch. Pediat., Oct., 1908); its value is comparable to that of diphtheria antitoxin. Its use will sometimes result in aborting the disease; the symptoms will frequently be relieved with great rapidity, the course shortened, the liability to sequelae lessened the mortality rate greatly diminished. It should be used as early as possible in all cases, even of suspected meningitis. It should be frequently repeated as long as there are symptoms of any tendency to relapse. Late chronic cases are unfavorable for the use of the serum, but any case in which the diplococci are present has some hope of relief from its use. Some cases are resistant to its use.

MODERN SCHOOL LIFE IN RELATION TO THE HEALTH OF CHILDREN*.

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ONE'S life might be said to be divided into four periods analogous to the arrangement in mathematics: addition, subtraction, multiplication and division. The addition time of life is early childhood. This is the time for great acquisition. During its continuance the individual is capable of acquiring a large amount of impressions, but he is not capable of making a selection. One of the child's weakest points lies in this early selective faculty. There is no more reason why he should know what is best for his mental development than that he should know what is his proper food.

Addition is followed by subtraction and the subtraction time of life is the time when the child becomes self-conscious. At this time the child begins his choice and deliberately eliminates from its life those materials which are felt at first instinctively and then rationally to be unpleasant or unnecessary. It is during this period that the most of us discover our function in life. These two periods are preparatory for the third—the multiplication time of life. In this period, the individual equipped by the processes of addition and subtraction goes out to fulfil his function; to multiply his knowledge; to give of what he has received; to make his presence felt in the world. In a word, to reproduce himself; to multiply his personality. And inevitably to each one comes the dividing time of life when the sum of the physical and mental powers that were active, now wane and the energy that once was is divided.

For the purposes of this paper we are interested only in the first and second periods, the periods of addition and subtraction, for it is these periods which embrace the life with which the school has to do. I have intimated that the addition period, the time of very early childhood is characterized by a large capacity for acquisition and incapacity for selection. And that the subtraction period, the period of later childhood and youth is characterized no less by acquisition, but also by an increasing capacity for selection.

It follows therefore that the duty of the teacher is, first, to make for the child a proper environment, and second, to assist the child in his all important power of selection. To his capacity for acquisition there should be brought the things worth while. To his power of choice there should be brought the illumination of a wise experience.

But in the doing of these things the teacher must take counsel with the child's individual fitness, in a word, with the child's health. For health is to education what foundation is to superstructure, and a building's use is proportioned to the strength of that building's foundation. From the physician's point of view the attempt to separate health and education will result in certain failure; the preponderance of either will invite disaster. They are interdependent. And without inward training and control outward health is an absolute menace. Ungoverned physical strength and passion are brutal even though the body of them be human. And of what service is a well developed mind with all of its powers aroused, unless beneath it all there is that condition of body which will allow its unhindered activity.

What is health?

It is quite necessary that we have a clear idea of what it stands for. To physiologists, it is a term of precision indicating an actual state of the living body. To them it suggests a picture; familiar with the various tissues of the body and their delicate adjustment to one another, they can bring into their minds' eye an image of the normal life which constitutes health.

The living child when closely examined from a physiological standpoint, reveals itself as a complicated mechanism like a watch. When a watch is working well, each part of the mechanism complementing the others, we say that it is a good timepiece. If the mechanism of the child's body is working well, each organ of the body acting in perfect accord with the others, we speak of that action as normal, or as a state of health.

A state of health demands that there be co-ordination and co-operation of parts; that the intricate yet correlated functions of each organ be carried on freely and without pain.

To illustrate: A child in perfect health becomes affected with an accumulation of the normal secretion of the ear which through neglect has not been removed. The result of such an accumulation is partial deafness. Immediately the child is deprived of one avenue of education. The straining in the attempt to hear more clearly results in certain reflex disturbances in distant parts of the body. The child appears dull and stupid and being accused of that fault, it begins to believe it. Discouragement on that account brings into play other undesirable emotions, the sensitive and undeveloped nervous system is damaged and the child is ill. Where was the fault? It was in the failure of one organ to act in harmony with the rest of the body.

We must take the physiologist's view. We must think of the body not simply as a piece of machinery made up of parts or organs delicately assembled and co-ordained, but as a mechanism which is not made but grows. This living mechanism runs down and stops at death; and while in theory, death occurs only when there is a wearing out of all the parts, in reality the mechanism does not wear out, but some one organ breaks down, gives out before its time and by its own failure involves the whole mechanism. Some of this premature breakdown results from inherited weakness; some congenital flaw in the material, but the larger part is the result of maladjustment to environment.

It is important to remember that the constitution of the adult is dependent almost entirely on the care that the body received during the period of childhood.

Now, how is modern school life related to the health of children?

As early as the 12th century, it is recorded that

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physicians used to visit the places of assemblage designated for those who were to receive instruction. And although the service rendered by these physicians at that time was of doubtful value, it still suggests to us that even at that early day, there was a recognition of the intimate relation of education and health.

But it was not until recent times that a well organized plan of medical supervision of schools was adopted. In 1833, France had laws passed which required certain cities to inaugurate a system of medical inspection of schools. And since then the idea has gained ground so that in place of medical inspection, many cities have adopted the plan of medical supervision. Medical inspection of the schools only partly solves the problem of the best interests of the child. It in a certain degree protects the child, and particularly from the dangers of infection, but it is necessarily limited in its scope; it can suggest but cannot remedy.

Medical supervision has all of the advantages of inspection with the added value of unlimited action; it brings about a unity of action between the educator and the physician. It suggests the means by which the child can be kept in that state of physical vigor which is commensurate with the possibilities of proper education.

And so the idea has steadily grown and, without accumulating instances, we might cite Japan where the idea of medical supervision of schools was first adopted in 1893 and where to-day she has nearly 9,000 physicians who co-operate with the department of education in the training of her future citizens.

Since education is necessary and attendance upon school is almost uniformly compulsory in this country, it is a moral obligation which the State must assume to protect the child from the greatly increased risk of contraction of disease to which by the modern school conditions he is exposed. And this moral obligation does not end when the risks of school life are minimized. Safeguarding the child while he is in actual attendance upon school is but a part of the whole.

The conditions which prevail in the home of the child must also be learned. In fact, in the matter of contagion, the greatest source of danger to the health of the school attendant is not from the companion or associate who is acutely ill with disease and cannot hide it, but the danger is from the mildest cases of contagious disease and from those who while remaining in a state of health themselves, carry the disease to others.

And there is an obligation to further protect the child; every source of danger to health, no matter what its origin, must as far as possible be eliminated. If the State does less than this at the same time that it compels the child to attend school, it falls far short of its duties. It is not sufficient to have compulsory schooling, there must also be proper schooling.

There are several things which accompany modern school methods and affect the health of the child.

First, there is the very close association with a company which is not of the child's choosing.

Second, there is an abridgement of the child's liberty for several hours each day.

Third, there is an adjustment of the child's life to strange conditions, both physical and mental, especially an adjustment of special organs to conditions which were previously unknown.

Now it is a well recognized fact that when school life begins, the child is exposed to a greater risk of contagion. The close association with other children for several hours of each day and for several days of each week gives an increased opportunity for the contracting of a contagious disease. How frequently we have heard the remark made: "My child was always in good health until we sent him to school," and then follows a history of illness with one or more of the contagious diseases.

We take this point for granted when in times of known infections, the schools are closed to prevent their spread. Infectious diseases are not uncommon during the period preceding the beginning of school life, for the younger the child the more susceptible it is to external influences. But the period of school life claims further victims and particularly those children who have not been infected before. The plain duty is to exclude from school such children as show evidences of ill health which might possibly be the first sign of an infectious or contagious disease. And it must be remembered that the possibility of transmission rests not alone with the child who may be infected, but disease may be carried through third persons.

Owing to the severity of many of the infectious diseases and their consequent effect upon the life of the child and their well known severity in young children, every possible precaution must be taken to delay as long as possible their occurrence.

A great deal of care must be taken in scarlet fever. This disease is commonly carried through the peeling of the skin which so often takes place several weeks after all active signs of the disease have disappeared, so that the mere act of hand-shaking is sufficient for its transmission. We know that after the local conditions in the throat have cleared up, that for a long period, diphtheria bacilli are still present in the mouth and through their agency the disease may be transmitted to another child.

The same is also true of whooping cough, which is readily transmitted by the discharges from the nose and mouth and is contagious for a long time. And so we might go on and recite instance after instance and disease after disease.

The child by nature is a playful animal rebelling against constraint, and if he be restrained too much, his health is bound to suffer. And restraint is not merely a question of minutes or hours, it must adapt itself to the individuality of the child. A new life begins for the child the first day that it is entered at school. The open air life to which it has been accustomed must now give way to housing for several hours a day. Unrestrained play must in like manner be repressed, and opposed to the previously unrestricted liberty are the necessary method, routine and discipline of school life. It is necessary that everything possible be done to reduce to a minimum the injurious effects which these new conditions in the child's life are liable to bring about.

The harmful effects of school life will show sooner

or later in those children who are unprepared for daily attendance upon school; the nervous, anaemic and under-nourished children, these are the first to suffer. So common is it that a general term of "school sickness" has been coined to designate it. Its manifestations are varied, but the more common of these is that the child becomes languid, irritable, peevish or hysterical and may suffer from headache, loss of appetite, impoverishment of the blood and sleeplessness.

Prevention, although not always possible, is better than cure and much can be done along the line of preventive measures.

The class rooms should be as large and airy as it is possible to have them and the number of pupils should be restricted within limits which are conducive to the perfect performance of the function of respiration. The modern school building is well constructed and particular attention has been paid to the subject of ventilation. As time goes on, the laity are realizing more and more what physicians have been teaching for years; that the child needs good fresh air just as much as it needs good, fresh food, and requires it with just as much regularity. Oxygen which is obtained in such abundance in good clean fresh air and is so grudgingly supplied by a stale atmosphere is absolutely essential for the proper development of the child and its continuance in mental exertion.

But what shall we say of the parent whose child is amply provided for by the State in this regard, and yet who refuses to have removed from the child's throat or nose, a mass of harmful tissue which by its presence prevents the proper inhalation of the air provided. Let me illustrate:

A child is sent to school in which hygienic conditions are as nearly perfect as it is possible to make them and a school in which this child's teacher is one who has some understanding of the laws of hygiene. There is every condition about the school and its management to insure for that child a successful performance of the function of respiration, but partially blocking the passage between the child's nose and throat is a mass of tissue which is called adenoids and frequently associated with this there is an enlargement of one or both tonsils. Such a condition makes breathing more or less difficult for the child and as the demand for air is insistent the child takes it in through the mouth instead of through the nose and this results in the characteristic facial expression of this child. The mouth is kept partly open, the eyes are dull and heavy giving the child an expression of stupidity. As the taking of a full and free inspiration is impossible the chest remains undeveloped. As less air goes to the lungs so less oxygen goes into the blood and so the nutrition of definite parts and organs which is dependent upon a good blood supply suffers. In nearly two-thirds of the cases deafness is present and is entirely dependent upon the presence of the adenoids. This deafness brings about a condition of mental torpidity so that frequently the child is blamed for mental incapacity alone when in reality there is a removable physical basis for it. The child is unable to concentrate his attention and becomes indifferent. Such a child cannot be properly educated until the conditions are made suitable for mental effort. It is not only on the basis of the health of the child that there is need for a correction of this deformity, but the best interests of education demand it.

The strongest criticism of the modern school building is related to its furnishings and particularly to the desks which are provided, and the criticism is usually justified. The child must early be taught to sit in a correct position and if such teaching is to be efficient, proper provision must be made in the way of furniture. A faulty position assumed at the desk should be corrected at once because through a lack of attention to this detail at this time, a curvature of the spine may result. The desks should be suited to the size of the child and the child should not be expected to fit any size desk which is provided for it. It should be so constructed that the child can sit at it in a comfortable upright position and without cramp or fatigue. The height of the chair should equal the length of the child's leg, allowing the sole of the foot to rest squarely upon the floor. When thus seated the top of the desk should be on a level with the child's elbow. The back of the desk must be slightly higher than the front, so as to allow of a suitable slant for the assumption of a proper position in writing.

It is unfortunate that the desks adopted and in use in some parts of Sweden and lately introduced into Great Britain are not used more generally. They are so constructed that they may be adjusted to the proper height for each child. In addition to this, they may be turned over from a hinge joint in the flooring, so that in cleaning the room, every part of the desk and the flooring beneath it is accessible and exposed to view. Absolute cleanliness of the school room is of such prime importance in preventing the spread of disease that this matter of proper cleaning should be given considerable attention.

It has been the experience of the race that dirt is one of the most effective carriers of disease. And later research has shown that dust is, as a rule, rich in bacteria. In the open, the unfavorable conditions to which micro-organisms in dust are exposed namely, desiccation, unfavorable degrees of temperature, light and air, undoubtedly destroy some and weaken others, but this protection is not offered by the school room. Dust must always be considered as dangerous by sanitarians, not alone as a vehicle carrying infection but as an irritant to the mucous membrane. In just a few words, to be clean is, in a measure, to be free from the dangers of infectious disease. It is, therefore, quite essential that all of the dirt and dust be removed from the school room and this applies with equal force to that dust which usually remains on the under parts of the furniture and is not seen and to that which settles within easy view. There must be instituted a systematic cleansing of all parts of the room with such a device as will prevent the dust from being again thrown into the air. And those portions of the room or furnishings which are not readily accessible should receive particular attention, for generally along base-boards, mouldings and the tops of blackboards and closets there occur the accumulations of weeks.

And before we leave the subject of the school building, let me say something about its architecture as well as its utility. The magnificent and beautiful modern school building was not in the dream of Whittier when he penned his description of the little deserted country school. The more modern of these buildings are beautiful. The child's mind is open to impression; think what possibilities there are in such a building to awaken in that mind, the artistic taste. We cannot have too many such buildings; the architect of the school is doing his best and so helps the architect of the mind in his or her work. And the justifiable pride which the child takes in a fine building could be made of more use in fostering a feeling of civic pride; a thing much needed in our cities to-day.

The charge is not infrequently made that children are taught too much; that too many subjects are forced upon them; that by this process they receive a smattering of a lot of things, but do not learn any one thing well. To some extent this may be true, but it is made necessary by the scheme of general education under which we are living.

It is not possible to determine just what particular knowledge will be most needed by a particular child in its after life and so a very large variety of material must be brought to it. And this has its advantages, for most intelligent children demand variety; they delight in change. But because they are pleased by it is no good and sufficient reason why they should receive it, but on the other hand, they are actually benefited by the introduction of variety into their mental work; their attention is not concentrated too long upon one subject and as a result they do not tire so readily and learn better. Children dislike specialism and are more apt to co-operate when there is sufficient variety. They may be made to automatically repeat facts for an extended period, but they are incapable of thinking or reasoning about such facts for long periods.

The attempt to compel the child to co-operate by concentration of its thought or attention for an extended time will result in brain exhaustion. In a consideration of the effect of mental overstrain as the result of the pressure of education, we cannot disregard the influence exerted by the emotions. The fear of failure to succeed may in one child be the cause of mental exhaustion and this quite apart from the amount of mental work which the child has accomplished. In some children (just as truly as in their elders) ambition may lead to the development of exhausting emotions, such as jealousy, unkindly feeling toward a competitor and kindred emotions. Boys are not so apt to suffer in this regard as girls because they generally create an outlet for such feelings by the exercise of their pugilistic tendencies after school hours.

The danger of overlooking the existence of mental overstrain in the child is always present because the child has some difficulty in describing his mental sensations with accuracy, and even if he could, he is not as free or willing to do so as is the adult. More often he will make a more strenuous endeavor to concentrate his lagging attention. With the one exception of headache the child will usually make no complaint of his symptoms. The adult confides to his friends, the dread which he has of the morrow and its duties, he tells of the uncontrollable imaginations of error or wrong, of his irritability which he always attributes to not feeling well, and the hundred and one complaints of which he is to his view, the undeserving victim.

But the child conceals these things, he is irritable and fretful, but he makes no excuses: he may exhibit fits of passion or wilfulness which are unnatural for him; he is brilliant for very short periods and in certain studies, while he is dull and a laggard in others; he is restless in sleep; and in these particulars he shows without audible complaint that there is something wrong.

It is the commonly accepted idea of educators and parents alike that the younger the child, the greater is the liability to fatigue and the more marked its effect upon the system. But it may come as a matter of surprise to some to learn that this is not strictly so. Between the ages of seven and nine years there is a very decided deficiency in the physical vigor of children. This deficiency is not confined entirely to the physical state but is associated with a mental lack of vigor which is physiological. For many years the child during this period of life was considered as being lazy and was accused of a lack of attention and effort which was supposed to be wilful and deliberate. Now as a matter of fact, the boy or girl at seven years gives evidences of fatigue more readily than the child at six. And at the age of eight fatigue is much more easily induced than at either six or seven. At the ninth year the child possesses a limit of fatigue which is approximately the same as at the age of seven. From this time on there is a gradual but progressive increase in the capacity for physical and mental work until the next period of fatigue, which occurs in girls about the thirteenth year and in boys of fourteen.

The second fatigue period lasts for several months and during its continuance, the girl is not capable of concentration of attention upon one subject for an extended time without injury. As nearly as can be determined, the limit of time spent upon one subject without evidence of fatigue is twenty minutes.

A year later in boys, or at the average age of fourteen, the most rapid bodygrowth has begun and the brain ceases to increase in weight and in fact shows a decrease temporarily while the several organs of the body are undergoing a physical revolution.

During this period, twenty minutes is the maximum limit of successful concentration upon one subject. Between the ages of fourteen in girls and fifteen in boys and until the eighteenth year in each, there is a gradual increase in physical and mental vigor, so that concentration may safely be prolonged to thirty minutes.

This leads me to consider briefly although its importance might warrant a more extended discussion, the average length of time during which the normal child is capable of mental concentration without injury to its health. Such a consideration of the averages would not detract from the necessity of individualizing each case when circumstances demand it.

Between the ages of five and seven, it is usually possible for the child to successfully concentrate its

attention upon one subject for fifteen minutes. At first there may be some rebellion against doing so, but this is not brought about by an incapacity but by a lack of desire.

At the age of eight years the limit of concentration is reduced to twelve minutes. At nine it is again possible to increase it to fifteen minutes. During the following year there is a rather rapid increase in capacity so that by the tenth year, twenty minutes is a safe limit.

Between ten and thirteen, twenty-five minutes is the average. When the average girl reaches the age of thirteen the most rapid growth of her body ceases and she has also at that time reached her maximum brain weight and the second fatigue period is present.

Now with this in mind, what is the result of over-application; of a disregard for these physiological fatigue periods in the life of the child? Every minute spent in concentration after the child is incapable of properly co-operating is worse than wasted. From an educational standpoint, any further attempt to instruct cannot be adapted to the child's state of mind; he cannot co-operate; such attempt at teaching loses definiteness and repetition is worse than useless. And so most, if not all, of the laws of teaching are violated in regard to that particular child. And from the standpoint of the health of the individual, an attempt of this character is harmful.

While it is true that over-application must be detrimental to the health of any child, there are many conditions in the child's life which greatly reduce its capacity for mental concentration and which render the child much more susceptible to fatigue. Without enumerating all of these, it is only necessary to make this broad statement; that whatever retards, reduces or interferes with the child's normal development, in turn interferes with and reduces its capacity for attention.

But there is one element so common that to pass it over would be an error; this element is nutrition. The period of childhood places a demand upon the body which is proportionately greater than at any other time of life. The child is subjected to more excitement, more work and more physical and mental strain than in later life. The developing organism and the activities of the child's life require that nutrition be the best. In the adult, food is largely a matter of making up for waste, but in the child there are two important factors; the repair of waste and the supplying of material for unimpaired growth.

Nutrition is of prime importance; I can hardly emphasize too much the high place which it occupies in the education of the child. Neither do I hesitate to make what may at first seem like a sweeping statement; that there is nothing that affects the education and health of the child in a larger degree.

The diet of the school child must be as nutritious and varied as possible and regularity should be the keynote of all that has to do with the taking of food. The requirements of education upon the body demand that the child have an abundance of fruits and vegetables, carbohydrates and fats. It is particularly during the earlier years of school life that the nutrition is apt to suffer. The child is then under a new kind of excitement, there is the worry over lessons, the desire to hurry off to school and the meals are to the child a secondary consideration. And too often the child is the one who is given the selection of what it shall and what it shall not eat.

The diet should be proportionate to the demands made upon the child, but nutrition does not end with the partaking of food; it takes within its scope the assimilation of food, the distribution of bodily heat, the avoidance of fatigue, the regulation of the rest and the kind and amount of recreation. And unless the parent who holds the power of control of these matters will exercise that power, the teacher of the child is seriously handicapped in the work of instruction. And further than this, if such a child is given the mental training which the parent will probably demand, under the circumstances of poor nutrition, the child is certain to suffer and an impairment of the health result.

And there is a demand that the necessities of modern school life make upon certain organs of the body. For example, the eye and the ear must accustom themselves to new conditions, and the close application of either organ may put upon it a strain for which it is not ready, and if this is done, damage results. The organ not being able to do its part, is the cause of reflex disturbances in remote parts of the body and the health of the child suffers.

There was at one time a common saying in regard to sleep; that a man required six hours, a woman seven and a fool eight; and I am suspicious that the one who made this statement slept eight hours and was of the male persuasion. We must admit that there are individual characteristics and peculiarities in regard to the amount of sleep needed even in the healthy. These cannot very well be disregarded. But from the study of the needs of a large number of school children in the city, it is evident that between the ages of six and thirteen from eight to ten hours should be spent in sleep. It is a well recognized fact that true insomnia (that is, insomnia for which there is apparently no cause at all) is very rare in children. But sleeplessness which can be readily ascribed to a very definite cause is common. Irregularity in habit, the partaking of food that is not suitable, insufficient bed covering, poor ventilation of the bedroom, and conditions of like character will be sufficient to cause disturbed rest or actual sleeplessness, and the habit once formed tends to continuance.

Modern education imposes upon those children who are industrious but slow, an increasing mental strain, and such children require to spend much time in sleep. But the matter of sleep can be overdone as well as underdone. "Early to bed" is always a good principle and applies to all children. "Early to rise" is also a good principle for most children, but not for all. The child who is drowsy and languid in the morning, who begins his day lacking freshness and spirit should be allowed to sleep longer in the morning, until it has been determined what the definite cause is.

And irrespective of the baneful effect of loss of sleep upon the health of the child, a pupil suffering from such loss cannot be sent to its instructor except

with the assurance that its best mental work cannot be accomplished.

To get the benefits of education a child must receive correct impressions, and if there exists a lack in vision he cannot do his best work until that is corrected. It frequently happens that faulty vision is not detected until the child attends school, for at home there has been no close application of vision, or a slight error has gone unnoticed. But school life puts the organ to the test and it may then for the first time be found defective. Just here is the opportunity of the interested and observing teacher. By watching the child under varying conditions, it is easy to detect that more strain is being placed upon the organ than it can comfortably accommodate. It is not uncommon to find a child who for a short time and under favorable conditions has what is apparently a normal vision and if placed before the test card the fault in vision is not found. And yet when put to work in the class room such a child will indicate in no uncertain manner that the eye is being overstrained.

Now the reflex symptoms which will accompany ocular strain will differ with the temperament of the particular child, but it is not necessary to go into detail in regard to these; as they are but symptoms. But the mental status of a child with defective vision is below that of his companion of equal ability and with normal vision. And if in addition he shows signs of a reflex disturbance, he is sure to exhibit a mental condition which is subnormal.

Until the defects of vision and of hearing are corrected the child should be restricted in its work or be excluded from attendance upon school. This is necessary not only to prevent any further damage being done to the child's health, but also for the reason that if several such children are associated in a class, they detract from the possible progress which the children with normal vision and hearing could make. A child so affected is essentially backward; he views things in a wrong light; he tires easily and cannot give proper attention. All this leads to discouragement, and a discouraged child is not for the time amenable to instruction.

These matters are important because it is not alone the present welfare of the child that is concerned, but its whole future. Moral obliquity is frequently due to physical deformity; physical abnormality is commonly the secret of mental under-development. And the duty and privilege of the modern school is to educate and to see to it that the child who enrolls is capable of education. Modern educators must take counsel with the effect upon the child's health, of association with large groups of children, of unnatural restraint, and of overstrain or any one or more organs of the body.

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Pneumococcus in the Blood in Pulmonary Tuberculosis.—L. Panichi (Berl. Klin. Wochen., Oct. 12, 1908), found the pneumococcus in the blood in four out of thirty tuberculous adults, without giving rise to any disturbance and apparently quite latent. In none of these four cases was their any history of pneumonia.

DAY DREAMS AND THEIR EPILEPTOID SIGNIFICANCE.

BY T. H. EVANS, M.D., FREEPORT, N. Y.
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THOSE who study children's ways are familiar with the type in which moping or sitting around in a dreamy state, supervenes on the natural play of a child. In the latter we recognize great imaginative sports of fancy as quite natural. But when the age of adolescence brings with it the introspective and personal appeal, and the child feels the drawing toward that splendid world of imagination in which poets live and move, one of three results may be predicted.

1. Day dreams may become indulged in, absent-mindedly. These the child enjoys without realizing the play of fancy is part of himself. As maturity increases the dreams center in wants and powers concerned with normal tastes and occupations, and with the occurrence of actual achievement the man, or woman, gradually ceases to visit the world of "suppose it is," and labors in our world of "take things as you find them."

2. Day dreams may occur as epileptic crises. In this instance the person will suddenly pass off into a fanciful train of thought and become lost in it while the thoughts gradually more confusedly intertwine and finally all connected thought is abolished, consciousness fading to a negligible quantity. Such day dreams occur at awkward moments and constitute disease, which in an epileptic may take the place of genuine crises.

3. The epileptoid day dream occurs in neurotic subjects. These people have some idea or set of ideas which seizes on them, perhaps ideas which from childhood up have been encouraged. These ideas ma ycenter around normal pleasures, as music, or some travel recollections, or they may be associated with abnormal impulses and group immoral or sexual impulses. The patient, receiving some impression, or sensation, which starts the train of associated memories, sinks into what appears absent-mindedness.

Until disturbed, or by resolution of the fancy, the patient continues to pass by one flight of ideas to another, and encouraging the wildest and most improbable imaginations. In cases in which abnormal sexual impulses exist these are brought forward and figured with every delight. In instances in which the subject wishes to be or become an artist, a poet, a musician, day dreaming plays no mean part; but in the unstable ground of neuropathic subject little or no fruit is ever matured. The day dream swallows its tail and vanishes.

Just how much the distinction epileptoid should bear in cases of this third category, must be granted with caution. Some very peculiar symptom complexes may be noted. The practitioner forming his own classification will be governed by the value which he feels due fine shades of difference. With some, every modification of consciousness of a functional origin not associated with permanent changes organic in nature, and recurring in crises may be classed as epileptoid. Especially so when accompanied by vasomotor disturbances of transitory character.

In neuropathic subjects the day dream, at various levels of consciousness, influences the entire life. Casaubon, in George Eliot's masterpiece, Middlemarch, became influenced early by dreams of literary supremacy. No doubt much of his character, in so far as his longing for fulfilment, and his vast planning, was familiar to George Eliot in the (normal) dreams of her own youth.

That her maturity brought achievement carries with it the fact of her recognizing limit and the range of life. Pure longing does not guarantee success. The work of genius, forced forward in the teeth of the wind of ridicule or distress, works itself out by sheer will not to be something. Willing not to be results in that acute definition which shapes and moulds and fashions. Recognition of this necessity the neuropath does not have. Recognition of limit, of endurance, is unknown to the afferent nerves of the neurasthenic, and in cyclic stages equally unknown to the parasthenic. Recognition of limit, of will and achievement, is unknown to the psychomotor and idiomotor centers of the egoist and of the man of genius. The latter, however, designs. He is willing to prune, to reject, to formulate, to sacrifice. The egoist, pure and simple, sacrifices the world rather than himself. But in gaining it, as he does, in the play of fancy, he loses his own soul, himself. Conquering the world (of fancy) he becomes its slave. Alexander sighed for more worlds (of reality in war) to conquer. But he fell victim to lust and sensuous enjoyment. The entremes meet. Neurasthenic, and Brute.

But among types of patients we must encounter are many on a middle ground.

These, frail personalities, pass before us as stars in a cloud of mist. If they have any power or any meaning it is lost in the confusion of the day dream habit.

The case of a young girl occurs to me. She was, and is, quite a musician. But three ideals seized upon her and, now to one, now to another, she sacrificed, but never firmly devoted her energies in sufficient degree to accomplish results measuring up to the results which in (more or less) wilful day dreams she enjoyed.

Taking up the theory of music she worked along to the point of "setting a melody." Then becoming drawn to some socialistic interests she essayed charitable work. She took personal interest in the case of some social settlement affair, which quite eclipsed the attraction of her music. A return to study of the mandolin and guitar followed. This was succeeded by a period of little interests proper to women.

All this while, by hours each day, she would sit in a chair and dream, awake. A glow and exultation of an extreme pleasure would accompany the train of imaginary circumstance, ideas of musical success, of charitable undertaking, but none founded in fact, all colored and developed to the highest pitch of enthusiasm. Then when the dream passed, she would sit quiet and relaxed, in the exhaustion of profound mental weariness.

Another case, in a young boy. He was very fond of day dreaming, and would draw maps of fanciful countries, lakes, cities, peopling and living with them all in imagination. He outgrew this habit, and turned to severely scientific pursuits, with success.

A case of a young clerk who was passionately fond of music shows another form of day dream habit.

Even in walking the street, or at his desk, his mind would turn to the subject of music, imagining that he, the clerk, was a great piano player (by no means true). In an instant he would figure the orchestra as it began some (imaginary) concerto, and himself at the piano. His eye would brighten, his steps become rhythmic, his attitude expressive of some exciting interest. Forgetting all about him, he would pass the place he should have walked to, would drop packages, not noticing friends in passing on the street, and becoming absentminded, so they remarked, but not aware of the real state of his mind.

His day dreaming, habitual and extending through years, at times worried him. But he could not shake it off. William Lee Howard, in one of his books, writes of a semi-sexual form of day dreaming associated with a passion for violin playing. But in this case the day dream is quite subordinate to the actual playing of music—and is merely a form of passionate relief. Day dreams, per se, are sought regardless, and usually in disregard, of personal power to externalize and manifest, and while accompanied by real effort in some instance, the effort and the result are both disproportionately less than the ecstasy of the dream would warrant. Novels are full of these amorphous characters. Life shows us many instances; another in mind, that of an insurance clerk:

A young man of very taciturn appearance, who read widely and appreciated Thoreau, became fascinated by negative philosophy and refused habitually to accept any idea beyond personal sufficiency.

He would read only to reject, listen only to criticize, talk only to attack. That he had some method, and some belief is undoubted. A very unhappy childhood owing to a misfortune affecting his father, who was imprisoned, I think, caused him to look sourly on the world about him. The character of Thoreau interested him because of the man's power "to be himself," a phrase used and loved by unhappy people whose disappointments give them views away from the sunset, and on the other side of the rainbow.

When day dreams arise from a soil of disappointment, and this means after childhood (for no great disappointments are common in that golden age), some more complicated element has to be accounted for. The patient must not be expected to turn to fits of absentminded reveling, when of mature years, because of mere idle pleasure, unless production and the achieving play of imagination is poisoned at the fount.

Paresis gives examples, early, of reversion to younger habits amid breaking down of the higher experiences. The childishness is of a horrid and horrifying nature, in its absolute loss of the finest in the personality and the accentuation of what is stupid, foolish or useless. Day dreams of a silly sort are to be noted, and the patient passes through foolish sorts of fancies which his weakened mind enjoys and accepts for want of better.

The pathology of day dreaming is concerned with

vasomotor influences and the domination of the sympathetic centers. That some psychic changes may occur, first, is true in cases. But many if not most of the patients exhibit circulatory symptoms referable to transitory vasomotor disturbances.

What influence a disordered metabolism may exert upon the sympathetic system in these cases remains to be worked out.

Dietary vagaries are always present. Hyperchlorhydria is common. Bulimia occurs in consequence, or periods of anorexia which may suggest the awaking of tuberculous foci. The rapidity of the pulse increases our suspicion, but torpor of liver, and gastrointestinal irregularities are also noted, and these together with the day dreams and the listless demeanor of the patient after his mental debauches, clear the diagnosis.

Among the symptoms of day dreaming may be named the signal disregard of fact. Day dreamers are prevaricators. They are also conscious of this failing until the habit passes over into the second stage, in which the truly epileptic or epileptoid character of the attack declares itself.

The wild giving over to senseless delight in enthusiasms of fanciful achievement gives rise to weakening of the moral and physical tone. Nero was a day dreamer, an imperial day dreamer at that. It is not improbable that he was an epileptoid of advanced type.

The moral tone of a day dreamer varies with the amount of the unreality he absorbs. He comes to disdain ordinary matters, when the day dreaming habit grows upon him. He neglects familiar duties and lives upon a mirage of the soul.

Furthermore, physical health deteriorates in as much as the enthusiasm excites the unrestrained emotional centres as masturbation self centers the properly altruistic impulses of mankind. Each access of exaltation, followed by tidal descent of emotion to deepest ebb tears at the root of nervous force and weakens its resiliency.

When etiology is in question the day dreamer presents a problem. Some defect in hearing, in vision, in other special sense, or some moral stigma may obtrude upon the field of consciousness as Tennyson's black bat's wing of night. A precocious or even precious turn of mind exaggerates the difficulty and turns upon itself, rending the elements of its own existence.

David Deronda saved himself from day dreaming, we may suppose, more by good fortune than by clear understanding. Some others, less happily fated, find the world one of disappointment and turn into bypaths of the mind.

A psychic element must be accounted for in the etiology. Among the characteristics of people of heavy pelves, and light shoulder girdles, accompanied by slim short arms, and long, very completely developed lower extremities, thin or nasal and uncertain voices will often be met. If these subects have the neuropathic eye, one of rather uncertain gaze, or an eye which softens as it looks into another's, the faculty of day dreaming is present and may become pathologic. Does become pathologic if any tendency to masturbation exists beyond adolescence.

Attacks of day dreaming may become very annoying. Even the patient endeavors to save his powers of concentration; but work suffers and serious consequences staring him in the face are not enough to save him.

Many transitory physical ailments by adding to the elements of distraction, increase the habit. A cold in the head, or an indigestion resulting from the secondary hyperchlorhydria brings on repeated moments of absentminded day dreaming. Or the decentering of lenses worn for astigmatism increases the weight the miserable neuropath suffers.

What to do? Treatment is at once moral and tonic. One should correct eye-strain. Endeavor to ascertain a right diet. Lay down a daily hygiene, but avoid impressing the patient in a hopeless or worrisome fashion.

If the patient be youthful and free from neuropathic taint, the result of suitable companionshsip will assist any merely tonic regimen.

The practitioner, in his busy rounds, meeting some anemic, sallow girl, will little think to what heights of enthusiasm she gives herself at moments of day dreaming. Even her countenance changes and puts on a beauty quite unexpected. The boy day dreamer loses the clammy hands and feet he annoyed us with, and becomes vivid and real to us as well as to himself. How to direct such bursts of energy is a supremely important matter.

When day dreaming is diagnosed a regular neurologic and psychiatric eaxmination is called for. To the results of this, the clinician adds his modicum of "common" sense. If any foundation in fact for the enthusiasms of dreams be found, encourage a moderate and systematic training of the faculty involved. If any sexual element is concerned, use every prudence to guide the craft rightly over troubled seas. If music, or profession be desired and desirable, try to advise the boy or girl how to attain economic independence. Be wary of entering too seriously or too lightly into these childhood territories, and if true poetry exists therein, do not destroy the loveliness of life. If egotistic and selfward tendencies have to be eradicated, do so with a care that the good seed is not also ruined.

Treatment of the vasomotor centers, in so far as tonics and energizing agencies may be found suitable, is indicated. Travel, and its wonderful addition of experience, when possible, should be advised. Anything noble or of genius in the subject will not be harmed. Anything trivial or selfish may receive its death-blow in the widening of life.

Day dreaming may produce criminals—people who desire and who do not reckon upon the cost. Great men have succeeded often at great cost—attaining.

But the hapless and nerveless day dreamer gets nothing but a handful of dust, no matter what he exacts from others. The criminal day dreamer may result from actual mental obsessions, or fixed ideas, which bring their victims to insane deeds. Or the nerveless weakling may do crime from sheer lazy inability to do good.

Treatment of epilepsy is often valuable in epileptoid manifestations accompanied by or shown in the habit of day dreaming.

We have the use of bromides and hypochloridization, administering the bromide salt not too near meal time. The employment of oleoresin of capsicum and other astringents enables us to vary treatment. Hydrobromic acid is useful in cases in which there are reflex elements of strain in the etiology, and when bromides have not been well borne.

Endeavor to regulate the emotional life of the patient. But do not pen up emotion which will finally break destructively. The problem of mental and moral hygiene centers upon a happy and productive life, and when production brings about happiness, the day dreams will not much matter.

DISEASES OF PERSONALITY.

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THIS paper will be held close to shore. Deep and expansive seas of psychic speculation, floating along beyond practical service of the physician, afford him no foothold upon the sands and rocks when reaching to rescue floundering minds. Much as in cases of the human will-function, physicians who devote considerate attention to diseases of personality in the rounds of medical practice, will be compelled to study the bent of mental divergence in conjunction with the weave and fixation of habit that evolve the varied patterns of diseases of personality.

The abnormal is always a deviation from the normal make-up of personality, and is distinctly recognized by some discriminating perception of the observer. The deflected or defective mode of intellection, as demonstrated by various kinks and curves, peculiarities and eccentricities, which characterize the individual outputs of certain men and women in the world about us, are the matured products of misdirection and misgrowth of human development. The golden truth of the old proverb: "As the twig is bent the tree is inclined," can never wash out or be expunged from the constitution of mankind. As the twig of thoughts and habits is trained by the vigilant and practical gardener of character, so will be shaped the normal attitude and wholesome excellence of judgment and conduct and work among the inhabitants who sustain the better levels of life and action. Like common mind troubles, fretting, grieving, jealousies, resentments, malice, when unduly indulged or nursed, naturally deepen their roots and strengthen their perversions until the contortions of mania capture the weakened intellection, so do the little deflections of personality grow and spread to confirmed proportions that obscure various concurrent traits of excellence, and thereby betray to general judgment of others distrustful symptoms of unrelished queerness that few approvingly abide on lines of social or business intercourse.

Starting out, probably, with the gratification of some personal whim, a characteristic habit binds an imperious junction with the mood and manners which deploy unwelcome broods against the public acceptance and usefulness of the eccentric character, whose diseased personality was not corrected or suppressed in its formative stage, and which in later life is recognized as a "queer Dick" or an "odd sort" mainly because of absurd mannerisms or freak ideas. A man of excellent physique and education, whom I occasionally meet because he obtrudes his effusive attentions upon me, though a stranger, as also upon many others whom he notices, habitually ignores social proprieties. Being a newspaper man, he evidently started the practice of pushing cordial manner of acquaintance, and "buzzing" anybody and everybody he wished to look at. Now he has lost his ability for discrimination, but rushes upon persons anywhere, even crossing the street while holding the attention by loud calling and greetings, shakes hands in most friendly way, holds fast while he unclasps briefly a volume of his ideas relative to some public person or policy; this whisked with a dash of his criticism, lets go and moves on laughing heartily at the jolly of his absurd jokes. This gentleman is not considered "crazy" in the accepted meaning, for he attends to his daily occupation as a journalist, but he illustrates a case of disordered personality too long indulged, and which has grown beyond his comprehension of reasonable discretion as a news compiler or editor of public opinion. After an exploit of his thought last evening, I saw him extend his hand in courtly way to bid his auditor "good bye;" but the latter only reached his forefinger in response as the measure of a bored acquaintanceship. Elements of a fine personality diseased!

A timely repression of peculiar whims, or the desire to seem peculiar or odd, if counteracted by the cultivation of the more sanitary sentiment and habit, may prevent perversions that mar the individual adaptation to happier social and sexual and family and business experience, including public repute, and normal prospects of prosperity and success. When I was attending medical lectures preparatory to induction to professional life, I formed the pleasant acquaintance of a highly educated and interesting young lady with literary aspirations. She affected to assume that the gift of authorship implied some special type of personality. Though she only occasionally wrote in snatches and patches of production, she studiously aimed to make herself the heroine of her family. At that time it won her increased attention and favor. She was an intense admirer of the semi-weird character of "Jane Ayre" by Charlotte Bronte, and coddled the fancy that her sentimental qualities were of similar type as those of this book's heroine. If she essayed to write in daytime, she would first bolt the shutters to bar out the sunlight. Preferred the weirdness of darkness peered by glimmering gaslight as stimulants of ideal thoughts. She was favored with the friendship of a philosophic mind in an oldish man whom she fancied was like another "Rochester" to "Jane" in "Jane Ayre." When the wife of a friend died, she would prepare the beautiful obituary for public print. If she joined company in the parlor in the evening, she would purposely appear with a little brown shawl about her shoulders, which she removed and spread over the back of the chair which she would occupy. Her voice was entrancing and her conversation absorbingly interesting.

She told me in after years that she enjoyed affecting these little personal fads at that time because they drew to her the charm of deferential interest. Her costume was purposely chosen to differ in style not in vogue with prevailing fashion. She assumed to be preparing thoughts for a great novel. Had ambition for elocution and a stage career. Was a Shakesperean devotee and often carried with her a small copy of his plays. Was ready in learned conversation, and enjoyed controversy with brainly men. In all, she developed a confirmed oddity of personality—first by choice and practice, which later on sidetracked her destiny to grooves of narrowed isolated distinction. Her favorite conceits became sacred and unapproachable. As a principal of girl's public school she repulsed the judgment of her directors with out-of-date arguments—was invited to resign—and relieved of her position. With no ambitious conquest materially won, no prospect substantially realized, at forty she entered the estate of marriage, but with no further mental or social progress. The isolation of her wifehood-monotony speedily rusted her energies, and she has for years been a nearly helpless invalid in mind and body, devoid of the brightness that glows from cheering friendships which she failed to cultivate through the selp-absorption developed as the natural result of her diseased personality—the infection of which was bred by a voluntary desire for the whimsical distinction of presenting an air of ideal oddity. With her superior abilities and by a sanitary mode of training, her opportunities would have escaped the dwarfing process that misdirection of her ideals drifted fast upon shoals of failure in life. Pathetic example of a brilliant young woman's career blighted by the canker of diseased personality.

As a medical man somewhat matured in judgment, when I meet a young person of either sex starting out on the drift of whimsical or fanatical vagaries of mental purpose and practice, I make it my golden duty to calmly, earnestly, timely caution and advise the superior formation of habits of thought and action that reliably promote wide and advantagous acceptance among the intelligent, the worthy, the helpful and successful circles of the world's material workers. And to thereby avoid habits of mind and demonstrations of method that merely seem conspicuous because of eccentricity—eccentricity which is readily recognized by its elements of weakness and foibles rather than appreciated for tests of reliance and value as an asset in life. I hold that to perform this service for the untrained mind and reason is as much the professional duty of the qualified physician, as is the ability to judiciously administer aperients or nervines for the disabled function of the body.

It is not my opinion, if diseases of personality are characteristic of certain families, that they are essentially inborn traits or hereditary defects. On the contrary they naturally result from the infection of imitative impressions. Personality is formed rather by the comeliness, or by the distortions, accepted or acceptable by perception. And perception begins after the function of consciousness gets into working operation. It is then, also, that the machinery of the will begins to exploit its type of activity in the individual. Hence the personality of individuals is the tangible product of constructive thought, of responsive training, of the adjustment of expressive habit. Of all instructors who should impress lessons of guidance in the formation of wholesome personality, the province of the physician should rank pre-eminent. He is supposed to comprehend the influence of nerve impulse, of brain tone, of the force of temperament, of the reactions of physical conditions on the mental functions, of the ease with which waywardness of disposition may be allowed to subvert the higher realm of reason and performance. The facts of lower physics can offer no excuse for chancing to luck the highest interests of humanity by deferring to the incidental opportuneness of ministers and Sunday school teachers who know too little of the physiology and psychology that temper the mainsprings of human character. The prowess of mere drug medication is pronouncedly on the wane, the realm of mind is rapidly expanding, the body is the machine, the mental complement is the illuminant and reflector; our profession must keep forward step or fall pathetically to the rear of advancing progression in the world of intellect. Therefore if the responsive physician will measure up to the higher province of his allotted sphere in service to minds as well as to bodies, he yields to no one in opportunities to benefit the race. Thus the progressive physician becomes a practical student of personality. He may prove of inestimable service to many unreflecting parents, by intelligently clarifying their insight relative to the early needs for prudential guard and guidance necessary to the rational development of growing families whose personality must attest the quality of their passports to future realizations in life.

It is certainly as easy, also more advantageous, to have the human outfit, mental and physical, defended against the vampires of malaria, of neurasthenia, of melancholia; defended against the goblins of torpid livers, the ptomains of sluggish bowels; to be capable of cultivating presentable habits of person and sanitary air of spirits; as, contrarywise, it is to indulge capricious aberrations of personality which impair individual capital in the sphere of experience and action. I repeat on this point because it needs to be repeated—now and forever. There are too many who are erroneously disposed, and yield to besetting inclinations, because their inveigling habit is not suspected or timely feared—as dalliance with strong wine begets the serpent that haunts the happiness of incautious drinkers. I once heard the eminent Henry Ward Beecher assert, in substance, that many persons who are disposed to evil ways, engage in them because their hepatic organs, their livers, need the proper doctor.

The broad-guage doctor is aware how transformed becomes one's personality by the organic sensations of physical conditions. A healthful tone of system promotes a normal optimistic equipoise of temperament and action. Depressed tone or disordered functions reverse the mental attitudes, obscure the cheering light of normal prospects, sweeps the color-brush of blue or black across the estimates that are accorded to persons and things in general. The habitual mood and tense of such persons or patients may be chronically self-centered to such exaggerated degree that the personality itself remains permanently dis-

ordered. The Ego constantly looms above all else as the cherished idol of life. The indulgence of or humoring of abnormal impressions has matured a fixed state of psychic schlerosis that confirms to permanence the transformation of the individual self. Again and again we find it: "As the twig is bent the tree is inclined."

Purposely I refrain from here considering positive conditions that verge directly on the situation of illusions and lunacy—including instances where the person's mental perception and imagination are aberrant to such extent that the individual fancies his or her personality has been merged into the personality of another. A case of this kind in my own practice recurs, where a young lady of modest position and education persisted in declaring that she was not Miss E. L. (her proper name), but was "The Grand Duchess." To some minds such situation might resemble delirium or mania; but believing that I recognized in it an element of hysteria and transposed mental impression resulting from recent excitement, I treated according to my belief with prompt reinstatement of her normal sense of personality. In this connection there recurs to me a case of more exaggerated transposition of the idea of personality. When a student at Wyoming Seminary, one day I heard a loud voice passing along the street by the building. It proved to be that of a man about sixty, on foot, proclaiming: "I am God! I am God! Be prepared—I am coming—I am God!" The man manifested no other noticeable evidence of delusion. He would pause for a minute or two to speak socially with persons he met by the way; but on continuing his march, at once resumed his loud declaration that he was God. It is probable that his habit of thought on Scriptural prophesy had mentally led to a perversion of personal identity—an exaggerated or extravagant phase of diseased personality.

So long as his outdoor announcements harmed no one, but resembled street exhortation in a measure, no reason prevailed for assigning him to the detention of an asylum. I learned that for a long while he had the habit of starting out proclaiming: "Be prepared!" In seeking a rational process leading to this assumption of extraordinary identity, it is probable that this man had overdone his study of the Bible revelations of Deity in the problem of the judgment day, or something of that sort which got the better of his discernment. The characteristic personality of individuals is largely patterned by the fashion of thought preferably adopted for practice. If we can prescribe on a harmonious line with individual trend, our efforts naturally prove agreeably successful because they escape the resisting personal element that confronts us as a species of obtrusion to the thought and purpose of another—the instinctive obstruction of independent revolt. Again, in certain exceptional instances, where contrariness and spontaneous opposition are self-gratified elements of personality, the very fact of personal revolt will stimulate an auto-repairative process, and occasionally reveal to our baffled conception the realization that the patient has practically healed himself or herself by means the reverse of those we prescribed and insisted on. For that instance our anticipated prestige has missed its glow; whereas if we had agreeably worked on lines of harmony with the individual's phase of personality, the desired results aimed for would have been credited to our skill and have sustained our professional repute. In managing diseased personality, we need to start on the diseased side of the problem if we would satisfactorily succeed. This means the finesse of cultivated acumen—the sensitive compass needle of every physician in obscure but important work.

There is a problem of disordered sense of personality to which I will merely refer in this paper. It is expressed by one sex assuming the garb and mental attitudes of the opposite sex. There occasionally appear in medical journals and newspapers accounts of revelations of abnormal instinct portrayed by the outer costume of certain individuals. A female in structure poses as a male to the outer world—and vice versa. In the very early years of life, a girl realizes no difference between herself and a boy in frocks, until she happens to perceive that his sexual formation is different from her own privates, and that when going out of frocks his clothing is fashioned after that of boys'. It is possible that the girl then fancies the male garb in preference to her own. In her immaturity, as a whim she may begin to wish that she was like the boy in everything, and sees no reason why she should identify herself as a girl, except perforce as custom of clothes. She fosters the thought as far as she can; and when attaining the puberty stage of development, discovers her love for another female, and begins to enact the natural part of a male towards the object of her fascination, even by artifices of sexual resort, so long as the farce can be maintained. There are women, all about us, who fall intensely in love with certain ones of their own sex.

Some years ago I had as a valued patron a woman quite twenty years married, and mother of six children, who became so enamored of a certain other woman, and a stranger at that, who daily passed her door, that this wife, lover-like, noted the hour morning and evening, and found occupation in ruse around her front steps and pavement at the opportune time for the pleasure of brief mental tryst when the stranger lady passed, unconscious of the admiration thus bestowed. In this case my female patron experienced the impulses of the male. In relating the affair to me, she ardently declared her regrets that she was a woman; and added that if she were a man, she would certainly pursue this stranger lady till she could secure the acquaintance of the latter and eventually marry her. Doubtless in instances of mixed sexual personality, where a female in form affects male attire and a male affects female attire, we should not attribute the freak to mere perversion of eccentricity. It is rather probable that there occurred misdirection or combination of the sex instincts in utero—in embryonic constitution of nature—possibly in the mutualizing impulses of the sexual conjunction between the male and female leading to conception and pregnancy. What would be more natural in the conjoined love-passion of the sexual embrace by man and woman?

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LOBAR PNEUMONIA; ITS ETIOLOGY, PATHOLOGY AND COURSE.

BY JOHN B. HUBER, A.M., M.D.

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PART I

LOBAR Pneumonia, spoken of also as Genuine or Croupous or Fibrinous Pneumonia, Pneumonitis and Lung Fever, is a general acute infection having for its characteristic lesion an inflammation of lung parenchyma (that part of the organ made up of the terminal bronchi, the air vesicles and their component parts, all of which are intimately concerned in the process of respiration). The presence and growth of pathogenic bacteria are essential to the existence and development of this disease. Lobar pneumonia is now classed among the general infections; and not, as formerly, among diseases affecting only the lungs and being circumscribed in those organs. The nidus of infection is in the lungs, but other organs and tissues are involved, oftentimes very seriously. Besides the pulmonary lesion there may be localized processes elsewhere; or other organs and tissues may even present lesions clinically at least as conspicuous as those in the lungs. The inflammation in lobar pneumonia is exudative; the alveolar blood-vessels giving up serum and fibrin from their contents, with accompanying emigration of leucocytes. Sometimes the exudate is serous rather than purulent. The fever in this disease terminates by crisis, and with comparative suddenness. The disease is self-limited, and runs a definite cycle quite characteristic of general infections. Its death rate is enormous, sometimes exceeding that of tuberculosis; the aged suffer most. It is of very wide distribution, existing in every State of the Union; and it is considered to prevail more in the South than in the North.

ETIOLOGY.

In lobar pneumonia as in most other infectious diseases, we must distinguish two kinds of causes: First the bacterial cause, which is the essential or the "specific" cause; and secondly the predisposing causes which enervate the body and thus render it susceptible to the attacks of the germ.

The specific cause of lobar pneumonia is undoubtedly the diplococcus pneumoniae which Fraenkel obtained in pure culture in 1884; the name of Weichselbaum is also to be associated with that of Fraenkel in the discovery of this germ, which is known also as the micrococcus lanceolatus, or the pneumococcus. It is an elliptical, lance-shaped, non-motile, non-flagellated organism appearing in encapsuled pairs; there are no spores; it is demonstrated by the Gram method. The streptococcus may be mistaken for it; but the methods of Hiss and of Schottmueller, familiar in the laboratory, will make the differentiation. A temperature of 52 degrees C. will in ten minutes destroy the pneumococcus. It is, however, fairly resistant to dessication and sunlight, especially when imbedded in sputum, which is thus protective; the capsule increases the resistance. When dried and powdered it is much less resistant, being killed by direct sunlight in about an hour. Like other bacteria it resists diffuse sunlight better than direct; it may live fifty-five days in the former. It has been found in at least ninety per cent. of the cases of lobar pneumonia in which it was sought. It is found in the nasal, pharyngeal and bronchial secretions and in the mouths, and even in the conjunctiva of many healthy persons; in the rusty sputum of patients and in their saliva and nasal secretions, in their blood sometimes, and almost always after death in the smaller blood vessels. It persists for weeks or months in the mouths of pneumonia convalescents.

Infection of the lungs comes about by inhaling the cocci; suspended in droplets of saliva or mucus, or adherent to foreign particles, they may be carried fairly deeply into the bronchial tubes. It is very likely that they do not by this means alone reach the alveoli. And this for several reasons, some of which are supplied by the physiology of respiration. We recall the division of respired air into complemental air (that which can be taken in by a forced inspiration); tidal air (which is changed in an ordinary cycle of inspiration and expiration); reserve air (which can be forcibly exhaled); and residual air (which remains in the lung after forced expiration). The exchange of the lighter, pure, oxygen laden air and the heavier air saturated with carbon dioxide is made, moreover, mainly in obedience to the law of the diffusion of gases. The velocity of inspired air is thus greatly reduced or made quite nil long before the air vesicles are reached. From these considerations (with others presently to be stated) we must conclude that direct passage of the pneumococcus into the air vesicles is most unlikely. Other reasons why this is so are that germ-laden dust and infected droplets of sputum or other secretion must strike and adhere to the walls of the respiratory passages long before the alveoli or even the terminal bronchioles can have been reached; oftentimes these foreign bodies are carried out again in coughing or by the action of ciliated epithelium; moreover, the tortuous passages of the nose, and its hairs arrest many germs. Yet in one way or another, though not immediately on inspiration, the pneumococci do of course reach the alveoli; they have been found in the parenchymatous tissues of the lungs of those who have died of other diseases than pneumonia. The air containing them must ultimately reach the alveoli; or forced respiration accompanying violent cough will carry them thence from the terminal bronchi; or they may be carried by diapedesis, either alone or in the leucocytes through the walls of these terminal bronchi and may reach the alveoli directly through the lymph channels or after having caused infection in the peribronchial lymph glands. Or lobar pneumonia may follow hematogenous infection, the diplococcus having reached the blood channels; that this is so must be obvious from the fact of the occasional occurrence of lobar pneumonia secondary to pneumococcus infection in other parts of the body.

The pneumococcus, indeed, is found in many parts of the body other than the lungs; and in many other conditions besides lobar pneumonia; here we see well illustrated the biologic principle that the same microbe may be present and pathogenically active in various affections the clinical manifestations of which are absolutely different. Besides being responsible for lobar pneumonia, the pneumococcus may set up

inflammation in many other organs and tissues; it may be found in the blood, the heart, the spleen, the stomach and intestines, the kidneys. It is found allied with other micro-organisms in primary and secondary broncho-pneumonia (a disease distinct from lobar pneumonia), in pleurisy, influenza, endo- and pericarditis, cerebro-spinal meningitis, peritonitis (through the diaphragm), acute synovitis, iritis, dacryocystitis, in metastatic infections (following their invasion of the blood stream), in dental, muscular and subcutaneous abscess; there is probably no human tissue insusceptible to it, and sometimes in ways quite fatal.

We have now to consider a second important biological principle—that in a disease clinically well defined (as is pneumonia) a number of different microbes may be found active, in addition to the one germ which is the essential or specific couse. This is "mixed infection," and it is oftentimes the mixed infection which makes serious a disease that might otherwise not be so. Some cases of pneumonia are very grave indeed and quite hopeless; whilst other cases recovery with much satisfaction. One reason for this (among others presently to be considered), is that in the grave cases such virulent genus as the streptococcus are allied with the pneumococcus in the mixed infections; whilst in the comparatively benign cases of pneumonia there is little mixed infection, or the combination, with the pneumococcus, of innocuous bacteria.

The streptococcus plays a large part in the mixed infection of pneumonia. This germ may indeed be mistaken for the pneumococcus; but the alkaline-serum-water medium of Hiss, containing inulin, makes the distinction. It is found in bronchial secretions; it is to be demonstrated from these in cover slips. It is found in many other conditions beside croupous pneumonia—in primary and secondary broncho-pneumonia, pleurisy, endo- and pericarditis, meningitis, peritonitis, acute synovitis, otitis, etc. Besides the streptococcus the staphylococcus pyogenes is often found; the toxins evolved by both these germs are soluble. The Bacillus Pneumoniae of Friedlander is also found in pneumonia; it is larger than the pneumococcus appeared as plump, short nods, encapsulated; this bacillus may be pathogenic of broncho-pneumonia but probably not, in itself, of lobar pneumonia. The typhoid, diphtheria, influenza, and bubonic plague bacilli, the bacillus coli communis and the micrococcus catarrhalis are also to be found in lobar pneumonia.

Infection in this disease, as in many others, was recognized before we knew its essential bacterium. Lobar pneumonia was formerly known, as it is today, to be endemic in certain houses, barracks, jails and schools. It is sometimes pandemic. Direct infection was formerly usual, and is sometimes now the case in hospital wards. Nurses and doctors seldom succumb to the infection. Among reasons for this are: that they know what prophylaxis they must employ; they do not (or should not) see cases when they might be susceptible by reasons of bodily weakness or ill health; and they have no fear, which is a potent factor in the contracting of any infectious disease.

Now, as I have intimated, after having taken into consideration the microbic factor in infectious diseases we must next dwell upon the equally important factor of predisposition. Anything which weakens the tissues and organs, and makes them susceptible to microbic attack is a predisposition; and such influences must always be taken into account in considering infectious diseases. For example, in a family of five or six, one or two will succumb to pneumonia whilst the others escape the disease. Why do they not all suffer, since in the family relation they must all have been more or less subject to the germinal attack? The reason lies in that the bodies those who have contracted the disease were predisposed; whilst in the bodies of those who escaped the organs and tissues were sufficiently vital to withstand triumphantly the infection, and by means of such protective agencies as phagocytosis and the opsonic index to render important and even to destroy within the body the specific germ.

The pneumococcus, as we have seen, exists in the body even in health; some unusual conditions are therefore necessary to the development of attacks of lobar pneumonia. These conditions, as in all other infections, may lie in the germ, or in the individual (the predisposition) or in both. The pneumococcus may undergo a change in pathogenic powers with varying circumstances; that is one reason why some epidemics of pneumonia are comparatively benign, whilst others are productive of many deaths; possibly the pneumococcus will increase in virulence in passing from one sufferer to another, just as when other bacteria are passed through certain animals. The individual's resistance is decreased under various conditions, which are "predisposing." Children under six are prone to pneumonia; this tendency then diminishes up to the fifteenth year; but then, considers Osler, for each subsequent decade it increases. Venerable people are very prone to pneumonia, especially by reason of the hypostatic congestion which is always imminent in the aged who are weak in body. The death rate from the fifteenth to the forty-fifth year is computed at 100 per 100,000; from forty-five to sixty-five, 263; and in those who are sixty-five and over, 733 per 100,000. Negroes are more likely than whites to suffer; and men are more prone to lobar pneumonia than women. This latter is undoubtedly by reason of the greater physical hardships and exposure which the family's bread-winner must endure. The winter months, but especially those times in winter when the weather is changeable and unsettled, as in December and March, there is likely to be much pneumonia. During a long and even stretch of moderately cold weather, there is not so much suffering from this disease. Cold and wet, especially when the extremities become chilled and wet, predispose by lowering the resistance of the pulmonary tissues. How this comes about is not quite settled. It cannot be the cold alone because Arctic explorers are, I understand, amazingly free from lobar pneumonia while in the Arctics; but when they return to civilization they are as likely as anyone else to succumb. The reason for this must be that the pneumococcus is unknown in the rare, clean and pure air of the Arctic; whereas it is all too prevalent in the environment of civilization. The pathology of "taking cold" is not a settled matter; undoubtedly the

peripheral lowering of temperature that obtains under these circumstances results in a disturbance of the normal equilibrium of the general circulation, which must have its baneful effect upon the body in general. Certain organs must have a hyperemia, an excess of blood; whilst others have an anemia, a depletion. As a general proposition, chilling of the body decreases its anti-bacterial activities, such as those of the plasmal ferments or of the phagocytes; and this factor, no doubt, also diminishes the activity of the ciliae which would otherwise be more effective in ejecting pathogenic micro-organisms.

Fatigue very decidedly predisposes the body to pneumonia; men who must work arduously during long hours and in inclement weather are very prone to pneumonia. Medical men of large practice, who become exhausted through much work day and night, often succumb. Unhealthy conditions of the upper air passages and of the respiratory mucous membranes generally ("respiratory catarrhs") tend to pneumonia. And there are chronic diseases of the heart, kidney and digestive tract upon which pneumonia is oftentimes superimposed; and here the result is very likely to be fatal. In this connection it is well stated that persons rarely die of the disease which has the most seriously and most persistently affected them. It is the "terminal affection" to which they succumb; and among these the pneumococcus infection is very frequent. This pneumonia is one of the most frequent and the most fatal affections of advanced life.

Injuries to the chest wall not infrequently predispose to lobar pneumonia. We speak thus of "contusion pneumonia." The external wound may be but slight; whilst the resulting internal lesion may be very serious. It is a matter of constant surprise to the necropsist that there may not be even a mark upon the skin to indicate the site of the traumatism whilst autopsy will reveal etxensive tissue destruction.

Alcoholism is an enormous predisposing factor in lobar pneumonia. As is the case with all stimulants, the aftermath of an alcoholic debauch is to leave the system depressed and its tissues depleted and enervated; one must consider also the dreadful quality of whiskey (containing as it does wood alcohol) which is oftentimes consumed. Lobar pneumonia is found more in urban than in rural conditions; this is by reason of the more strenuous and enervating life in cities, the germ-laden dust which is inhaled, the tenement life, the overcrowding and the consequent increased liability to infection. It is said that newcomers to cities are less prone than urban natives to lobar pneumonia; if this is so (and I make no doubt of it) it must be because such immigrants have not yet become enervated by city life.

Gall-stone Disease, if not operated upon will, declares G. E. Ganin (Am. Jour. Surg.), terminate: By rupture that may cause diffuse peritonitis, or enter the alimentary tract; by adhesions to the surrounding organs, causing such distortion of the tissues that we have slow emaciation from indigestion and often a secondary ulceration of the stomach or duodenum, by developing malignancy.

THE PHYSICIANS DUTY REGARDING THE PROPHYLAXIS OF VENEREAL DISEASES.*

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TWO or more years ago, I read a paper before this society on Sexual Hygiene, since which time no sexual discussion has graced our deliberations. You will agree that this subject is a fundamental one, with which we must all be concerned—for from it comes most of the happiness and miseries of life. Its scope is so large that one hesitates to approach it, and your kind indulgence is craved if we are found wandering beyond the limits of the scope of this paper.

We will consider the subject from the standpoint of the physician to his patients, and the State in relation to its citizens, and the individual himself.

Syphilis and gonorrhoea have existed since the world began, but medical history fails to tell us where the first individual contracted either disease. Whether the bacteria are nothing more than perverted plant cells we will leave the biologist to determine. The symptoms of these diseases are described in the ancient literature of the earliest known races such as China, Mexico, Peru, Greece and Rome, and in the sacred writings of the Hebrews. Fowler claims that their introduction into America was coincident with the landing of the early settlers, but it has always followed in the wake of advancing civilization.

That these diseases seem to be on the increase most writers testify; it is claimed that the lowered birth rate of France is due to their ravages. Many diseases called by more honorable names are evidently syphilitic in their origin, and did our health boards, public institutions, dispensaries and hospitals classify diseases as to their venereal or non-venereal aetiology, more light would be thrown on their prevalence. Syphilographers make apparently extravagant claims concerning the prevalence of these diseases possibly owing to the fact that their clientele is made of such cases. One syphilographer's claim that at least 50 per cent. of the Atlantic Seaboard inhabitants are syphilitic is no doubt an exaggerated statement.

Now what do we owe to the community to protest them from the most horrible of infections? Should the public be informed concerning the extent of their prevalence, and how best to inform them? Should they know just how serious these diseases are, that they may never be cured, and that many general diseases, special sense diseases and nerve diseases may be syphilitic in origin? Do we treat these diseases too lightly, and hasn't our instruction been wrong when we were told that a case of clap was no worse than a bad cold—and that it takes twenty-one attacks of clap to make a man? "Ignorance is always the cloak under which vice stalks forth, and escapes to its hidden haunts whenever the light of knowledge prevails." Jenner turned on the light of vaccination which will banish smallpox, Lister pointed out the way to a surgical era, Klebs and Loeffler's names will be honored when there are no more diphtheria diplococci. Education is curing a large percentage of tuberculous patients,

*Read before the Alumni Association of the Norwegian Hospital, Brooklyn.

and doing infinitely more in its prevention, and the same must be true of venereal diseases.

Our sexual sense mas given us to use and not abuse. Woe to him who abuses it. The waging of such a battle of intelligence must be of benefit, great as are the odds something will be accomplished. The prostitute, the pervert and the roue we have always with us, and since the gratification of the sexual desire is pleasurable the only way for the prevention of clandestine intercourse will be the abolishing of the pleasureable sensation. The roue will go his way regardless of our efforts—but how about the youth and the maiden, my son and your daughter, what are we doing for them? Already the National Society for Sex Prophylaxis has sprung into being and medical minds are guiding it.

The question of the licensing of prostitutes, their segregation, and reglementation, their medical examination, all must be threshed out. In Sweden they are placed with the confines of the boundaries of their disgrace and are not allowed to pass out of it under penalty of arrest and fine, which might more properly be made to consist of imprisonment at hard work. Regarding the strictly moral side of this sexual question, have we any concern in the matter? Is it any of our business as physicians? I assuredly say yes, for physicians have always been the advance guard of any moral question. From a moral standpoint the question is very easy of solution. Preachers and moralists have only to admonish all to live up to the tenets of the seventh commandment. Thou shalt not commit adultery, which the Bible defines as one who looketh upon a woman with lust, committeth adultery in his heart, hence remain continent and remain free from venereal diseases which advice is being spread broadcast. It is not contrary to the physiology of the sexual organs to remain continent. The intelligent mother and father is to-day demanding that their son remain as the daughter, and the man that requests the daughter's hand in mariage must also be pure. It appears to me that while the fear of consequences, either venereal infection or conception deters many from sexual congress, cannot we better hold our sons and daughters true by showing them the purity and blessedness of a continent life?

Physicians do not seem in accord as to the physiology of a continent life, hence the advice to live continently may not be generally given. Nature has endowed us with full sexual ability at puberty and civilization is gradually lengthening the period between puberty and marriage. Hence if our sexual life is to be thoroughly rounded out and we are to escape the dangers of browsing it behooves us to husband our forces and not to sow our wild oats too young or too quickly.

Regarding education in these matters, to whom does the imparting of the knowledge of the reproductive organs belong? Since the State accepts the responsibility for the education of the young, why not give it this added responsibility, and the State must take up the question in its public schools if we expect to make much progress. They already have all the facilities to impart this knowledge. With parents we cannot do much, we can only reach a small percentage. If as physicians we advise parents of the importance of imparting to the children the knowledge of the uses and abuses of this function and the penalties of such abuse, we are rebuffed with the statement that their children are innocent and require no such enlightenment; that the mothers as children had no such one to instruct them, and why should their children have. It is only when such a child is ruined that the fond parent, previously apparently secure in the child's innocence and freedom from temptation, realizes that hers was a criminal neglect. So the State must needs do for the individual what the parent refuses. And from the kindergarten to the advanced classes lead to such a gradual unfolding of the knowledge of reproduction, that the child grasps the abstract without the imaginary. The course of study can well be left to teachers who have an advanced knowledge of biology and a still fuller knowledge of child life—and learn from the lesson in sex that Nature teaches in plant and animal life up to the development of the human species. And in night classes adults could well be given instruction along the same line.

Now with the knowledge so imparted to the youth, when his sexual instinct is blossoming and he knows he has been imbued with a God-given power that this desire is Nature's means of informing him that herein lies his human side—a desire that will make of him a thrilling vibrant being, with human aspirations human ambitions, human passions, will he not be better able to control to educate and hold in subjection this power until he can shower it with all his educated ability upon his bride pure unalloyed. His bride bringing to him the same pure virgin body—in such union is perfect happiness. No divorce courts mar such union, no childless marriage to bend the wife's head in sorrow, no mutilating operations unsexing the individual, and no sins of the father visited upon the children unto the third and fourth generation. So much for the moral side of the Utopia to which we all subscribe and which will be ushered in at the dawning of the millenium.

Now what about the young man or the young woman whose training has been ill, or whose sexual desires overpower their ability to control; are they criminals and to be controlled as such? Are they any worse than the goody goody class who desires and given time, place and opportunity and a knowledge that nothing would happen, would be likely to fall, but whose fear restrains; or the one who has no sexual desire and has never had it? Are we to condemn the sister on her bended knees who asks for strength, who is alive with passion and finally succumbs?

So young men come to us for information. What are they to do to prevent these diseases? Are we to turn them away with no knowledge, or if we give it them are we particeps criminalis? My answer is no. We must tell them what to do. How best to prevent infection. How to examine the mistress to be sure she is not diseased. Thell them to be continent and why, and then give them all the advice in our power to prevent any harm if they do digress, and if we are on the square with them, will not they be more apt to come to us when they are in trouble

rather than go to some charlatan? And how often they tell us after their first sojourn in the "Garden of Allan," oh, if they had only known.

Now we must impress upon them the contagiousness of this disease, how to prevent its transmission. And here comes the question of the recording of all venereal diseases, and should not the State enforce such recording as she does for all other infections? Whether such recording would deter venereal patients from coming to us for treatment, and cause them to go to charlatans who would not report; might it not have a salutory effect in influencing them in abstaining from illicit intercourse? The State has assuredly such power. The public should demand as much protection from innocent venereal infection as it does from other contagions. Would we not be able to control the dissemination of contagion by the prostitute if the State knew that she was diseased. We know that our advice to prostitutes to cease their calling while under treatment, is hardly ever heeded and we have no power to compel such compliance. When she becomes diseased her occupation ceases, just as long as painful symptoms continue, and objective symptoms become less marked. Of course, the higher we advance in the social standing of the prostitutes, the less likely are we to meet with venereal diseases, for like Othello she knows that her occupation will soon be gone unless she protects herself from disease, and she soon learns macroscopical diagnosis for her own financial protection.

We are agreed that the patient must be told the true nature of his affliction, and the dangers of communicability, and the means to prevent its spread. But must we shield a guilty husband from a suspicious wife, and vice versa? And are we liable if our information to either one leads to a separation? Are we to infer to the wife that the husband has syphilis or gonorrhoea? Most certainly not, and if not, how could such knowledge be kept from her if it were recorded?

Now how to protect the woman. And certainly more women than men are sacrificed to venereal diseases on the altar of marriage. What security has the woman that all is well with her fiance? Must she rely upon him implicitly and confidently, only to awaken to a life of suffering? Can we give our morning drop patients a clean bill of health, and does a urethritis absolutely recover? And how may we know after milking the prostate-seminal vesicles, Cowper's glands and urethra repeatedly, and find no gonococci, after a history of gonorrhoea, that in the first excesses of the new relation the old gleet may not again be re-established? No man would get married if he had an active gonorrhoea and was told that he might infect his wife. Need we mention where a marriage has been postponed because of urethritis in the male, and as the postponed date approaches and all evidences of the disease disappears, will not that bride be sacrificed? And would a woman refuse to marry a man who had a certificate of cure for gonorrhoea? I think not. And what of the cases that come to our knowledge where we refuse to consent to a man's marrying, and he does so contrary to our advice? Can we threaten to expose him? Most positively it is our duty to so do. Every physician should insist in all gonorrhoeics considering marriage, upon amost careful bacterialogical examination by an expert, of the urethra and adnexa.

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The Predisposition of the Pulmonary Apices to Tuberculosis.—C. Hart, of Berlin, found: 1. Aside from infection, the cause of pulmonary tuberculosis in youthful individuals is to be sought in an individual predisposition due to anatomic and functional disturbance of the normal conditions around the superior aperture of the thorax. 2. These improper conditions may be congenital, hereditary, or acquired during life. 3. The predisposition is at first purely local. Actual and functional diminution of the pulmonary apices not only favors the deposition of tubercle bacilli, but also diminishes the natural powers of resistance inherent in the tissues. 4. This predisposition determines the localization of the first tuberculous focus in the pulmonary apices. 5. Local predisposition is equally significant for air, blood and lymphatic infection. 6. The final outcome of the battle between the tubercle bacilli and the tissues depends on the degree of this anatomic and functional disturbance in the region of the superior aperture of the thorax. 7. Children do not exhibit this predisposition of the pulmonary apices to tuberculosis. 8. In older individuals (of the age of 50 and over) the predisposition is caused almost exclusively by inhibition of the function of the superior aperture of the thorax, due to senile changes. 9. The measures to be employed in combating tuberculosis should be directed, more than has been done in the past, against the development of an individual predisposition.

Primary Nasal Diphtheria.—T. Hubbard (Am. Otol. Rhinol. & Laryngology, Mch., 1908), calls fibrinous or membranous rhinitis nasal diphtheria, whether it is primary or not. It differs from fancial diphtheria in being nearly always subacute or chronic, and manifests but slight toxicity. Nasal diphtheria secondary to the faucial type is, unlike the primary nasal infection, a very active toxic invasion. There are two types of primary nasal diphtheria. In the one a false membrane is formed, with the attendant mucopurulent discharge; in the other there is mucous membrane inflammation, with mucopurulent or water discharge and no membrane. Blood may tint the secretions. The disease, in its mild character, runs a course of several weeks; and there is a tendency to recurrence. Extension to the fauces is rare; it may be limited to one naris. The Klebs-Loeffler bacillus is frequently present, and clinical experience does not demonstrate them to be very virulent; yet nasal diphtheria may be transmitted to others and result in active faucial infection. The patient with the nasal type is up and about; his disease may be unsuspected; he thus becomes a danger to others. Primary nasal diphtheria is much more common in infants than is generally supposed; it is perhaps the common source of epidemics in institutions. Small doses of antitoxin have a marked effect in this type, the bacilli are however harbored for a long time.

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THE STATE DEPARTMENT OF HEALTH.

THE annual message of Governor Hughes is certainly most inspiriting reading for the physician interested—as who among us should not be—in public affairs. Among recommendations of particular interest to our profession is the advocacy of more hospitals for the tuberculous poor; and particularly the repeal of the brutal law by which the erection of a sanatorium for consumptives in New York State has during several years past been practically impossible. Particularly should advanced consumptives, who are unable to maintain themselves, find rest in hospitals devoted exclusively to that disease; for it is they who are the most prolific of all sources of infection. Here is legitimate reason for the use of the public resources; for though the unfortunate patient is thus taken care of by the State, the prime consideration is that the public is thus safeguarded from the infection which such a patient would otherwise disseminate.

Another most urgent need emphasized by the Governor is the protection of our streams. "We can no longer afford to permit the sewage of our cities and our industrial wastes to be poured into out water courses; and the sooner we take suitable preventive measures the easier it will be to attain the desired result." Our present laws on this subject are inadequate and in the greatest need of thorough revision; and we should have legislation to compel local communities without undue delay to make provision for the suitable disposal of their sewage. Where there are processes for the disposal of industrial wastes which are not prohibitive in cost, their adoption should forthwith be insisted upon; and the Governor urges legislative action to the end that our laws be revised in order to prevent the pollution of streams so far as is practicable, and to equip the State Department of Health with the means for conducting necessary researches, so that complete protection may be vouchsafed our people.

It is here appropriate to congratulate the people of our State on the reappointment of Dr. Eugene H. Porter, upon whose shoulders will be laid the fulfillment of such plans as are outlined in the Governor's message. Dr. Porter has been the State Commissioner of Health during four years past, and his service is now by the Governor's action to endure at least four years more. The Commissioner and his able and devoted associates have truly deserved well of the body politic; they have most zealously and in the wisest way worked for the communal health; and have sought to apply the modern principles of sanitary science for ends wholly beneficient. We note from the printed reports of the State Department of Health that there is earnest co-operation with local health boards and with all medical and scientific societies; cases of illness, but especially of the communicable diseases, are registered; vital statistics receive really scientific tabulation and are thus made available for the profession's research work. Records are kept by which outbreaks of infectious diseases can at once be located; and epidemics are by such means altogether forestalled and prevented. The Department disseminates useful and attractive literature concerning matters of the public health, but especially concerning communicable diseases; it publishes every month a most informing Bulletin; its laboratories are at the disposal of physicians for diagnosis; it produces and distributes vaccines and antitoxins; it has long been investigating water supplies and sewage conditions; such diseases of cattle as may be transmitted to human beings are carefully studied. There are "conferences" in which the laity as well as medical men are invited to take part; there are "institutes" in which special information and instruction are given health officers; it is sought by these means and by the sending out of lecturers upon health topics, to educate our people in the essential principles of prophylaxis, those principles upon which all wholesome living must be based. And a truly epochal achievement is the establishment, in co-operation with Cornell University, of a School of Sanitary Science and Public Health. It has much too often been an unfortunate feature of our American public affairs that a physician charged with the conservation of the communal health ,who has done faithful service, has at the end of his too-brief term been dismissed through the exigencies of "politics;" that upon such dismissal all such a man's beneficent achievements have gone for naught, to the great dis-

advantage and loss of the community. It is therefore peculiarly felicitous that such has not in these premises been the case—that instead, by the Governor's reappointment, the regime which Dr. Porter has begun and fostered should be developed by him to its fullest fruition.

THE EARLIEST MAN.

THIS elusive individual seems in a fair way of being unearthed at last. A specimen of him, we learn, was recently dug up in Southwest France. This citizen was of the stunted, low-brand type, with prognathous jaws, broad shoulders, crooked thighs, slightly bent knees and of a semi-erect posture; skeletons of one or two of his brethren were also discovered in the "glacial deposits" of Belgium. It is calculated that these gentry prospered a matter of 150,000 years ago; they must have been a hardy race, slaying as they did, by means of their stone weapons, such uncomfortable neighbors as the hairy mammoth and the Irish elk. It would seem that Prof. Kemp of Columbia has not been speaking quite by the card in seeking among these skeletons evidences of the "missing link" between man and the simian form of protoplasm from which he developed. There is indeed no missing link—no midpoint of development between man and ape; science has definitely given up that notion, if it ever really entertained it. Both man and ape have been developed from an ancestor much lower than man and lower than the ape in the evolutionary scale. It is now the prevailing belief that from this non-simian ancestor there sprang a divergent type that eventually became man.

The Gallic specimen here mentioned has been pronounced by French savants to be akin to the Neanderthal skeleton, which was discovered shortly before Darwin published his "Origin of Species." It is of interest to note the opinion of Prof. Wm. Z. Ripley that a reversion to this Neanderthal type may come about sporadically from the mixture of races which is now going on so successfully in these United States; indeed it is his view that from this mixture (which he considers abnormal) there may be a reversion to an even much more ancient type—that of the ancestors from whom the differently colored races sprung. This is not an agreeable prospect, certainly; those who oppose indiscriminate immigration within our boundaries should find in it a powerful argument; nevertheless as this condition of things is not likely to eventuate for some 150,000 years to come there would seem little occasion for us of this generation to worry unduly over it.

We learn further, in considering this interesting but unimportant subject, that, not to be distanced in these matters by Southwest France, Prof. Wright recently discovered in the glacial deposits of Medina County, Ohio, a rough flint instrument evidently shaped by human hands; it must somehow have got there in the ice invasions of two thousand or so centuries ago. Dr. Ales Hrdlicka, of the National Museum, has moreover examined fourteen skeletons or parts of skeletons which at various times have been supposed to be of established American antiquity. He concludes (not quite in accord with Wright) that the "Quebec skeleton" was dug out of the solid schist rock on which the citadel stands; but that this rock was formed before human life could have been supported. The "Natchez pelvic bone" was found with bones of the mastodon and other extinct animals; but it may have fallen into the ravine among these early deposits. The famous fossilized Calaveras skull is similar to the skulls of a recent age taken from caves in the same part of California; and the "Trenton bones" are known to be the remains of Indians and early immigrants. The bones of the "loess" man discovered two years ago in the mounds of Nebraska offer "no insurmountable obstacle" to the assumption that all are comparatively recent. Most of these American skeletons resemble closely the bones of the modern Indian. The higher primates (gorillas and chimpanzees) which are considered to have differentiated from the ancestors of man are, or at least have not been found among us, but have existed only in Asia, Africa and Europe. Here should be a source of pride to the native American, that his primitive ancestry was indigenously human and not at all Simian.

PHYSICAL CULTURE AMONG COLLEGIANS.

WE have several times given editorial expression of our deep interest in this subject; it is therefore with gratification that we reproduce some opinions recently given in a lecture in Boston by Dr. Dudley A. Sargent, director of the Hemenway Gymnasium at Harvard. Dr. Sargent is the inventor of the modern system of gymnastic apparatus; and his purpose has been to benefit all and not only a few among the university students; it was his design to form not student athletes, but athletic students. He therefore confessed to some discouragement. Intelligent physical culture was not precisely a failure in American colleges; nevertheless the progress thus far made did not satisfy him. He

deprecated the extensive exploitation of athletics to the detriment of true scholarship in our Eastern colleges and universities; with President Eliot he deplored the influence of glorified competitive athletics upon the undergraduate body, and like that greatest and wisest of college presidents, desired to see physical culture an accepted cult among all students. Yet how has the thing worked out? "The gymnasiums," declared Dr. Sargent, "have come into existence as a part of the college machinery, largely to benefit the flat-chested, scholarly student, who has signally failed to avail himself of the opportunity afforded. The scholarship man has become paler and the athletic student 'fitter' as the physical standard and the scholarship standard have been raised by the keen competition, so that now the two classes of students are really farther apart than ever."

Powerful football guards there are; and agile shortstops and superb kickers; but the part which the vast majority of the student body plays in athletics is as spectators and "rooters." To the ascetic student physical exercise still means distasteful work, or just enough exertion to keep his blood circulating; whilst his mind would be all the better for the development of a sound body. He has no inclination to keep himself in good bodily training, as well as to pass his examinations creditably; although by this time he should realize that a vigorous state of health will make the road to learning smoother and delectable. Dr. Sargent has a very poor opinion of the highly specialized training that turns out Olympic winners; and we who in practice have to treat graduates of a few years' standing, can tell him also of the bad hearts and kidneys and putty-faces we find in these men, who were over-trained in college, so that they might win at boating and at football. We have much to learn, declares Dr. Sargent, from the far-sighted Germans, whose all-around physical equipment wastes no time upon attaining records; yes, and also the English who at Oxford and Cambridge find their greatest satisfaction not so much in winning races but in enjoying the sports themselves.

Dr. Sargent would have a physical test made of every boy entering college; after which, under the direction of a department of physical education those who are intellectually qualified to fill useful positions after graduation should be the special care of the department. The naturally robust and energetic will no doubt thrive and seek competitive sports without encouragement or attention. "For years the policy of Harvard has been to provide facilities for the many, instead of intensifying their interest in a few athletics." It would seem that this wise policy has thus far been only partially successful—a truly regrettable circumstance.

MEDICINE IN VENICE.

VENICE has been written up from almost every conceivable point of view; but rarely have we been vouchsafed a description by a doctor of this always interesting city. And when the physician's literary accomplishments are of an order truly superb, the reader is certain to be unusually charmed and entertained.* There is much that is diverting in Dr. Dana's letter to our esteemed contemporary, as: "The Venetians are great sticklers for isolation and disinfection when they wake up and find the case;" when a sufferer from tuberculosis or typhoid is discovered he is "denounced" to the authorities. "The Italians seem to prefer to neglect or ignore infection until it is no longer possible to do so, and then to atack it with a mixture of the ferocity of the past, and the science of the present." "The (hospital) notes were as meagre as those in certain New York hospitals when the interne thinks he is overworked." "When ill they (the Venetians) get their medicine and food and take it or not, as may be, leaving the rest to the saints." "Venice seems to take care of her insane in a more advanced way than of her sane sick; I was told it was the craziest city in Italy." But "crazy or not, the Venetians are a kindly people."

Dr. Dana finds many reminders of the days when Venice fought its oft-recurring plagues, not by cleansing its canals and palaces, but by processions and prayers and the building of a church in gratitude for the dying out of each epidemic. Nevertheless there must, in other eras than ours have been among the Venetians some dim intuitions at least, of the nature of infection, if we are to judge from Italian medical history in general. The Italian anatomists Morgagni and Valsalvi, for example, had some idea of the infectivity of phthisis. And laws were made at the instance of the latter, which no doubt well reflect a good understanding of the subject by the Italian people of that time. And when in 1754 the sanitary magistrate of Florence asked for an expert opinion from the Florence Medical College upon what articles would most likely be infected by a consumptive, and what means were best for their purification, Antonio Cocchi advised, in terms which would seem not at all anachronistic if set forth in an International Congress on Tuberculosis to-day. In 1760 a special hospital for consumptives was erected in Olivuzza, into which were moved such patients from other hospitals, in order that they might not spread the infection. In Naples edicts of like tenor were promulgated, albeit the punishments prescribed would appear to us a trifle dras-

*Dana, Charles L.: Medicine in Venice, N. Y. Med. Jour., Oct. 24, 1908.

tic, as: "Regarding physicians who do not reveal the nature of the illness (consumption), they shall undergo a fine of 300 ducats for the first offense, and for the second ten years exile." That infectivity was well comprehended in Rome (and that phthisiophobia, however, is not an essentially modern development), is evidenced in a letter to a friend which Chateaubriand wrote from that city, relating the death (from phthisis) of Madame de Beaumont: "I am in a great difficulty. I had hoped to get 2,000 crowns for my carriage, but, by a law of the time of the Goths, phthisis is declared in Rome a contagious disease; and as Madame de Beaumont rode two or three times in my carriages, nobody is willing to buy them."

But to return to Dr. Dana's letter: Venice, though a city of 200,000, and the favorite resort of numberless tourists, has to-day no medical college (though there is a very good one at Padua, only an hour away); it has but one hospital, few pathological laboratories, and nothing to take the place of our medical societies and academies. The city, however, has some good doctors, one of whom is at the head of the Health Department. The city water is good; there is now no malaria; the death rate is only 18 per thousand. It may reassure the tourist to note that if one falls ill in a hotel in Europe he is likely to get a native doctor who must pay the management or the portier a percentage; thus the patient may or may not get skilled service. The management like to have "a good hotel doctor," which means someone who orders expensive rooms and plenty of service, a not too quick recovery, entailing suitable fees. "This is no exaggeration of the actual state of things. It may not be any worse in Europe than in America, and it does not apply here in the very best hotels, perhaps."

In at least one thing, however, does Dr. Dana find Venice in advance of his own city. The former has a superb institute of mechanical therapeutics, installed by an enterprising company. It is under the patronage of the medical men of Venice, Bologna and Padua; and is equipped with every device known to our art for the application of mechanics and chemistry in treatment. "An inspection of this institute for kinetotherapy, and a recollection of the resources of New York, make one feel that ours is in some ways still a backward and provincial town. Perhaps for a time a little less money on our laboratories and more on our therapeutics would not be unwise."

Pneumonia in Infancy furnishes characteristic signs on which a diagnosis may be based before the lungs are examined (R. G. Freeman, J. A. M. A., July 25, 1908). The symptoms are sudden onset, depression, rapid respiration with a rapid pulse.

TELEPATHY.

THE question has long been debated concerning the existence of such a phenomenon as telepathy, or the supposed ability of one mind—even after death—to impress itself upon another without any direct communication through the senses, as we ordinarily understand their scope. The final and absolute demonstration that there is no such phenomenon would save humankind (so easily gulled as it is), from a vast amount of charlatanry and quackery. Mental healers, Christian Scientists and the like would no longer batten, as they do now, upon their assumptions of the ability to cure their victims by "absent treatment;" (it is odd, by the way, how favorite a method they find this in cases of contagious disease). On the other hand, a demonstration* beyond peradventure of the existence of telepathy would certainly affect the race in the most fundamental way. And that the subject is appropriate for the scientist to investigate is evidenced by the conscientious study which has been given it by such men as Huxley, Darwin, Faraday, Spencer, Wallace and Lodge. The first four among these men were unable to find any basis for a claim in behalf of telepathy. Wallace was a "willing believer," which need not be a matter of surprise when we reflect how "easy" he was in the hands of the anti-vaccinationists. Lodge seems to have spoken in favor of the existence of such a phenomenon; but one need not conclude him to be perfectly satisfied that this is the case. The subject is surely most worthy careful consideration by science; for the reason, as we believe, that the only solution of the question will lie in the application of the most rigorous tests which science can devise. We therefore observe with gratification that Mr. Frank Podmore* has presented some of the most recently ascertained facts (or shall we for the present term them simply data), with his tentative essay of a scientific explanation of telepathy. There can be no work more deserving of careful attention than that of Mr. Podmore. Considerably more than a decade ago he was the president of the Society of Psychical Research, the attitude of which through many years past toward phenomena seemingly supernatural has been consistently skeptical and not at all credulous. Nevertheless, when the proceedings of this society were published, Mr. Podmore, its then president, prepared separately and on his own account a volume** in which he expressed his dissent from many of the findings of the society as a whole, because he considered they had not been subjected to sufficiently rigorous tests. We may well judge of Mr. Pod-

*The Naturalization of the Supernatural (Putnams).

**Studies in Psychical Research (Putnams).

more's scientific temper in this observation regarding Theosophy: "In fact, many of the leading members of the Theosophical Society present, in the light of this inquiry, a pleasantly ambiguous blend of charlatanry and simplicity. Nevertheless it would be rash to prophesy, even now, notwithstanding the damning evidence of fraud, notwithstanding the loss of the unique personality of the foundress, that the movement is near dissolution. To most men who have given themselves over to a false belief there comes a time when the ears are deaf and the eyes are closed and the heart is hardened, so that they will not even believe the testimony of the false prophet against himself. With such men and against such a contention argument is no longer even possible." Thus it is with the greatest expectation of a rational thesis that we have approached the volume which was published for Mr. Podmore in July last; nor have we been disapointed.

Space permits us to consider but one instance among those which our author cites: An Indian prince on a Saturday night in 1893 visited a Berlin theatre in company with Lord Carnarvon. On returning before midnight the former went to bed, leaving an electric light burning in his room. As he lay abed he found himself looking at a frame on the wall opposite, which contained a commonplace picture of a girl holding a rose and leaning out of a balcony. In this frame he presently quite distinctly saw instead the picture of his father, the Maharajah Duleep Singh, looking at him intently. The Prince was in no especial anxiety at the time, and there had been no news to alarm him. On the following morning he told the incident to Lord Carnarvon. Late that Sunday evening Lord Carnarvon came into the Prince's room and handed him two telegrams. The Prince said at once, "my father is dead." At nine of the previous Saturday evening the latter had had an apoplectic seizure, from which he had not recovered, but continued instead unconscious and died early on the afternoon of Sunday. It seems that the Maharajah had often said to his son that if not with the Prince when he died he would try to come to him. Lord Carnarvon fully confirmed the above account.

Mr. Podmore considers that in such cases as this a partial disassociation of personality may have existed. The apparition was in the nature of a dream; the percipient's critical faculties may have been altogether in abeyance at the moment, however wide awake he may have been immediately before and after the experience. He, however, makes two important distinctions between waking hallucinations and those of sleep (which we call dreams). The waking vision is in the first place much rarer and much more impressive; again, it is the more likely to be accurately remembered, not only because of its rarity and impressiveness, but also because it has a fixed place in time and space. Whatever the actual state of the percipient's consciousness at the moment, however, the vision forms a link in the chain of waking experiences.

Other considerations obtain which would, in this instance, tend to divest the incident of supernatural properties. Podmore himself throughout his book is most cautious in drawing inferences from examples of what he terms "telepathic hallucinations." Again, in the example here given, was the Prince's impression a hallucination (a sensory impression without external stimulus); or an illusion (false perception)? Then there is the factor of coincidence always to be taken in consideration; particularly in this case, where the father having been elderly, his death might at any time have naturally been anticipated. There is also the highly imaginative and emotional temperament of Eastern peoples, coupled with the expectation inspired in the Prince by his father's assurance. Moreover, there is the fact that but two persons (the Prince and Lord Carnarvon), were concerned in the narrative. Without absolutely any imputation whatever of untruthfulness, one does not need an explanation involving the supernatural to understand that the elements in the case here enumerated wrought up the Prince, who in his turn suggestioned Lord Carnarvon; the literature of this subject teems with examples of such overwrought psychism, and such suggestioning.

We emphasize that Podmore by no means offers this as a proved case. He essays the following explanation of possibly telepathic communications: He likens thought transference to wireless telegraphy. The arrangement of certain of our cortical cells bears some resemblance to that of the particles in the "coherer" used for the reception of a message. The human brain may act as a battery; and in some individuals the power of transmission, whilst and in others the power of receiving, may be emphasized. Podmore quotes Sir Wm. Crookes: "The action of thought is accompanied by certain molecular movements in the brain, and here we have physical vibrations capable from their extreme minuteness of acting directly on individual molecules, while their rapidity approaches that of the internal and external movements of the atoms themselves." Possibly we have here indicated a mechanism sufficient for the purpose of establishing through space a connection between thinking brains. It may be objected that only certain persons, and not all human beings, seem to be affected by the telepathic impulse; but, observes Podmore, this objection need experience no

serious difficulty, since the brain of both agent and percipient may conceivably, on the analogy of wireless telepathy, be set to transmit and receive only vibrations of a certain amplitude.

All this, as Podmore fully recognizes, remains to be proved. We would here but offer the fact that demonstration by analogy is attended by more dangerous pitfalls than any other procedure in logic. To establish the analogy with regard to the subject we have under discussion, one must first cross the bridge between mind and matter; and this no thinker since Pythagoras has yet done. Nor can we, until we have explained the nature of mind, logically associated mind and electricity. We may say—with entire truth—that mind (or its product thought) is conditioned upon the physical, material brain and nervous system for its exposition. But mind is not brain; it is brain cells plus something else, nobody has ever been able to say what (except possibly the theological dogmatist). Perhaps we shall know some day what mind is; possibly the psychologists are going to tell us; but we don't know now. Electricity, on the other hand, so far as we know to-day, is a purely material manifestation.

Another consideration: In the case here cited the possibility is advanced that the Prince in Berlin received the telepathic message from his father in India; this is a long distance for either a thought wave (assuming for the moment such a phenomenon to be possible), or a "wireless" to travel. Crookes suggests, however, that "intense thought concentrated toward a sensitive person with whom the thinker is in close sympathy, may induce a telepathic chain of brain waves (what are brain waves, by the way?) along which the message of thought can go straight to its goal without loss of energy due to distance." But we submit that all discoverable forms of energy emanating from matter are invariably exerted inversely as the square of the distance; that is, energy diminishes in this proportion as the square of the distance traversed by it. We might assume telepathy to obtain from just around the corner; but it would be difficult indeed to conceive of it as being effective from the opposite end of the earth's diameter. We beg again to express our indebtedness to Mr. Podmore; it is refreshing indeed (amongst so much nonsense which has appeared on this subject) to have come upon so sane and conservative a presentation as he has vouchsafed us.

Mouth Breathing is sometimes a mere habit (Am. Med.) when obstruction does not exist. Such patients should be urged to eexrcise their will power by practicing nasal respiration on arising and retiring. Snoring is also frequently overcome by following this simple suggestion.

FOOT AND MOUTH DISEASES.

SOME weeks ago, it would seem, some cattle infected with this disease were received at Buffalo and were thence distributed in New York and Pennsylvania; this was the origin of the outbreak from which we are not yet fully recovered. In another column will be found a resume of this disease; we here note several factors of moment. Our authorities, State and National, have been very vigorous as they will ultimately be entirely successful in coping with this "cattle plague." Yet new cases are from time to time being reported. The period of incubation is from three to six days. A prolific source of infection is no doubt the floors of cars, stock pens and stalls in which diseased animals have been confined. There has therefore been a vigorous disinfection of such enclosures. There is also a quarantine designed to keep such diseased animals off the public highways. The specific virus has not yet been discovered; wherefore an exactly and precisely scientific prophylaxis is impossible. Only general principles can be made to apply. It has been suggested by the National Department of Agriculture that the clothing of immigrants might be a source of infection; but Dr. Doty, the Health Officer of our port, who is very experienced and wise in these matters, believes this suggestion to be erroneous; the same theory has in the past repeatedly been advanced to explain the spread of other diseases—notably yellow fever—and always fallaciously and with the result to relax the search for the real agencies of infection.

A prize has been offered to the investigator who should reveal beyond peradventure the micro-organism responsible for "foot and mouth" disease; considering the interests at stake and the importance of the subject, the investment in such a discovery should be heavy. We note also that the Government at Washington has undertaken to pay two-thirds of the losses resulting from the killing of diseased animals; this sacrifice is commendable both for the conservation of human health and for that also of cattle as yet unaffected. The situation is one, in any event, which need not give our people any very grave concern.

Lobar Pneumonia is not merely a concomitant of the cold weather season, declares C. M. Richter (J. A. M. A., Aug. 22, 1908). Its prevalence depends on anticyclonic weather, summer and winter, on the northern hemisphere, and not on low temperature. There is sufficient reason to assume that the quality of the air of an anticyclone changes in conformity with changes in the activity of the sun and that the prevalence of grip and pneumonia is subject to a specific quality of such air. Richter defines cyclones as low air pressures, and anticyclones as high air pressures.

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An author would have hesitated even a decade ago to have offered a volume like the one before us, upon so trite a subject, but at this date, the text has to be crowded, in order to get into five hundred and fifty-nine octavo pages, what must be said on this interesting subject.

The day of cathartics has evidently about passed, and in place of these agents we have psychotherapy, diet, and physical measures, such as bodily movements, massage, mechanical vibration and electricity.

The author calls particular attention to the various mechanical or surgical causes of constipation and makes plain the steps in the different operations required for their correction or removal, drugs being rarely employed.

For the benefit of those who continue to use medicine in the treatment of constipation, indications are given for the use of the various remedies, with numerous favorite prescriptions for the busy practitioner.

The author has discussed the educational, prophylactic, psychic, dietetic, physical and medicinal treatment of chronic constipation, and has devoted separate chapters to the complications and consequences of constipation, spastic constipation, acute constipation and the constipation of infants and children.

The writer can confirm from experience what the author says of mechanical vibration.

The subject is treated in a new and intelligent manner, and the book is worthy a place in the library of practitioners of internal medicine and surgery.

Saunders' Pocket Medical Formulary. With an appendix containing posological table; formulae and doses for hypodermic medication; poisons and their antidotes; diameters of the female pelvis and foetal head; obstetric table; diet list for various diseases; materials and drugs used in antiseptic surgery; treatment of asphyxia from drowning; surgical remembrancer; tables of incompatibles; eruptive fevers; weights and measures, etc. By William M. Powell, M.D. Author of "Essentials of Diseases of Children;" member of the Philadelphia Pathological Society, etc. Ninth edition, thoroughly revised, enlarged and adapted to the eighth revision (1905) of the U. S. Pharmacopoeia. 12mo. pp. 308. Price $1.75.

This little work has been brought to the level of our latest knowledge, is thoroughly reliable in every way, eminently suggestive, and just the book for a constant companion in practice, and should be possessed by each one of our readers, as it will be found a wonderful help without any question.

Practical Bacteriology, Blood Work and Animal Parasitology; including Bacteriological Keys, Zoological Tables and Explanatory Clinical Notes. By E. R. Stitt, A.B., Ph.G., M.D.; Surgeon U. S. Navy; Graduate London School of Tropical Medicine; Instructor in Bacteriology and Tropical Medicine U. S. Naval Medical School; Lecturer in Tropical Medicine, Jefferson Medical School. With 86 illustrations. Octavo pp. 294. Price $1.50. Philadelphia: P. Blakiston's Son & Co. 1909.

This really practical work enables organisms to be separated culturally for the purpose of grouping by the use of keys, and only methods of differentiation which are applicable in the private laboratory are given. Technic for immunizing animals to furnish such sera is stated in detail. A scientific yet practical classification of the important pathogenic moulds is also given. The chapter on media is clear, comprehensive and practical.

The book will not only be found of great service to the student, but to the clinician as well.

A Text-Book of Genito-Urinary Diseases; including functional sexual disorders in man. By Doctor Leopold Casper, Professor in the University of Berlin. Translated and edited with additions by Charles W. Bonney, B.L., M.D.; Assistant Demonstrator of Anatomy, Jefferson Medical College; formerly Surgeon to the Southern Dispensary of Philadelphia, etc. Second edition, revised and enlarged. With 230 illustrations and 24 full page plates, of which 8 are in colors. Octavo pp. 645. Price $5.00. Philadelphia: P. Blakiston's Son & Co. 1909.

The second edition of this classical work has been thoroughly revised, rearranged and amplified to meet present conditions.

A number of new instruments have been described, the treatment of several affections have been more thoroughly discussed, and the operation of circumcision has been described in the interest of the general practitioner, who often has to perform it.

Prof. Casper has revised the chapter on the treatment of hypertrophy of the prostate himself.

This work is thoroughly reliable, eminently practical, and worthy the attention of the general practitioner, as well as the student.

Surgery of the Upper Abdomen. In two volumes. By John B. Deaver, M.D., LL.D. Surgeon-in-Chief to the German Hospital, Philadelphia, and Astley Paston Cooper Ashhurt, M.D. Surgeon to the Out-Patient Department of the Episcopal Hospital, Philadelphia. Volume I, Surgery of the Stomach and Duodenum, with 76 illustrations, several of which are printed in colors. Price, $5. Octavo pp. 468. Philadelphia: P. Blakiston's Son & Co. 1909.

This work is the result of much painstaking labor, covering a period of four years.

The text covers a vast amount of research involving this great and important subject, is well and concisely stated, and beautifully illustrated.

No department of surgery has attracted more attention in recent years, and none has shown better work.

The authors have demonstrated their ability to prepare a practical, useful book, which will be required by all who are interested in its subject, as this is the latest work.

The present volume comprises the surgery of the stomach and duodenum, which has been sifted from the mass of literature by experienced hands.

International Clinics. A quarterly of illustrated clinical lectures and especially prepared original articles by leading members of the medical profession throughout the world. Edited by W. T. Longcope, M.D. Volume IV. Eighteenth series, 1908. Philadelphia and London: J. B. Lippincott Company. 1908.

The text covers the advance of physical therapeutics, the treatment of gastric ulcer, psychotherapeutics, gout and its treatment, gangrenous appendicitis with spontaneous cure, fractures of the skull, observations on Bier's hyperaemia, the role of insects in the transmission of disease, the serum treatment of epidemic cerebrospinal meningitis, the etiology and treatment of pernicious malaria and numerous other interesting subjects.

As we have often said before, the work is worthy the confidence of our readers.

CORRESPONDENCE

THE FOOT AND MOUTH DISEASE.

To the Editor of the MEDICAL TIMES:

It would be rather funny now, wouldn't it, if, after all the great excitement about this disease as a contagious one, it should transpire that in each and every individual case the victim contracted it for himself, and that the cause of it is simply a sedentary life combined with excess in diet? Well do w eknow that the grand scheme for profit in raising cattle for the market, is to build up the gross weight of cattle, sheep and hogs by fattening the creatures; and this means forced feeding and deficiency of exercise. In other words, we might say that the disease is one of too much in the mouth and not enough on the foot! The natural result from this procedure must be disease, finally, whether in man or beast. In a general way the truth of this dictum is known to all; and to bed-rock students of hygiene and dietetics it is a perfectly well understood problem.

Milch cows are everywhere victims of this unwholesome practice. They are, as the phrase goes, "driven" for heavy yields of milk; that is, they are excessively fed, and they have practically no exercise at all. The natural result of this is disease, tuberculosis, milk fever, etc. Finally comes the "test" for the "germ," and then wholesale slaughter, as is just now going on in some of the states for disease taking the form called "the foot and mouth disease." It does not argue against this theory, that the disease comes in epidemic form from time to time, with periods in which there is little or none of it. It is the same with all the filth-diseases, as diphtheria, smallpox, scarlet fever, etc. All of the "material" is used up during the epidemic; and thereafter, for a time, the disease disappears, except in individual cases, the ones in which the disease has been incubating for a longer or shorter period of time. It is a question of "survival of the fittest," finally; it is possible that, eventually, a breed of cattle, sheep, hogs and man capable of thriving in spite of unnatural conditions may be produced. What is your opinion on this topic?

The medical profession is more alert these times in applying the "fresh air cure" and diet for the prevention and cure of consumption and other diseases in the human, than in the lower animals. Wouldn't it seem altogether rational to isolate affected individuals, or herds of valuable cattle and apply hygienic treatment, than to execute all these victims of unwholesome management? Why not give them a fair show for their lives?

CHARLES E. PAGE, M.D.

Boston, Nov. 24, 1908.

SIDELIGHTS ON THE PRACTICE OF MEDICINE.

To the Editor of the MEDICAL TIMES:

One day an old fellow came to me complaining that he had difficulty in retaining his urine, the trouble being due mainly to an enlarged prostate gland. He claimed to be a "water-witch" and stated that especially whenever he passed over a vein of water, no matter what its subterranean depth might be, he was obliged to void his urine. This "witching" for water, by the way, is a common practice in many of the states of the middle west. A forked peach tree twig is used for a divining rod and the person who has the occult power to locate underground water with it twists the stick around in his hands and sallies forth where the water prospects look good to him. When he gets over a vein of water the stick involuntarily untwists itself. Perhaps the efficacy of the test lies in two things: The witch goes where the topography and natural conditions suggest water and is on a par with the old, bygone practice of operating for stone with a stone in the hand; then another thing that helps the test to a try-out is that the twig must sometime untwist, just as all things must sometime stop. There are many people who believe in this superstition and who also think that in some inexplicable manner the underground water channels affect the urinary organs.

This incident suggests the psychologic element in the causation of many ailments and how the same when properly turned may have as salutary an effect in the alleviation of many morbid conditions. We are learning more and more that all from which the human family suffer is not always a tangible entity. We cannot see anything in many of the neuroses and psychoses that daily confront us, yet we know that such conditions entail much suffering and too often eventuate into processes distinctly pathological. The searchlight psychiatry is doing much to clear up matters along this line in recent years and we now see some things with a reasonably clear vision where before we saw them "through a glass darkly." Perhaps our greatest strides the past few years have been in getting some sort of index, tentative at least, on morbid mentality. It is true that normal cerebration still remains in the realm of the speculative and always will until a few more senses are developed, yet careful clinical study has revealed much concerning the abnormal function of the brain and central nervous system. We are often enabled to diagnose insanity and nervous breakdowns before they actually occur. As we learn more of the riddle of personality, or temperament as formerly called,

the better are we prepared to cope with disease in its protean and diversified forms. Therefore the true physician, the physician of the future, should be a most thoroughly qualified man and possess all the attributes that go to make a metaphysician.

The last sentence suggests another thought: Should there be any system, cult or method of relieving physical and mental disease (not-ease) outside the realm of the physician? We wear the title "physician" and "doctor" interchangeably; one suggests a healer of disease and the other a man of learning. We do not always make good in both roles and too often in neither. Evidently the man or woman who spends from four to six years in preparing to practice the great profession of medicine should have embraced within his curriculum a little of everything that is worth knowing. The mere fact that many cults and peculiar systems of healing flourish go to show that there is a demand for these things. No matter how erratic any modus operandi of healing (?) may appeal to us, it doubtless contains an essence of truth or its recognition would have been very momentary indeed. Great inroads have been made in the doctor's business of late years by uprisings of a semi- and quasi-medical character, many of kinds and varied in their methods. The strongest of these are osteopathy and Christian science.

Let us take a little survey of osteopathy first. It is a big fad. Too often it is a complete fake, but perhaps the same statement may apply to general medicine as it is so often practiced. The last few months a few of our most widely circulating magazines have contained articles on osteopathy in which that branch of medicine is paid a most glowing tribute of laudation. The history of it from its incipiency when the thing emanated from the fertile brain of its founder is carefully outlined. There are shown illustrations of pathologic conditions that have been rubbed down and cured by osteopathy—conditions that physicians who lack this infinite skill and wisdom ordinarily pass along to the work of the Great Physician. Osteopathy was unknown fifteen years ago and now there are several thousand doctors within its ranks, they being recognized in a number of states and having founded several colleges. Granted that they have made wonderful strides and still seem to be gaining ground. It is also granted that the system deserves the credit for apparently curing many tough old cases and mitigating many ailments of an obscure character where the regular physicians had met with signal failure. The fact must not be overlooked, however, that many a regular physician is successful where a brother of the same school was not. The one getting the last whack at a case often stands a better show of registering a cure to his credit. He profits by the history of the case and what his predecessors have done and perhaps shies around a few pitfalls. Furthermore, if the disease is not one of hopeless chronicity there is a chance of it spending its fury and naturally eventuating in recovery. But let us analyze osteopathy as we find it to-day and note the conditions that make for its success. Osteopaths are skilled anatomists and physiologists. These qualifications are the basis of a good doctor. The old-time homeopath was an excellent anatomist, surgeon and diagnostician and these qualifications made him a success and not his sugar pills or his infinitesmal potencies.

The intelligent osteopath began to learn that it was an herculean effort to convince well-informed people that the major portion of their ills were due to twisted or misplaced bones or an impingement of tendonous or ligamentous tissue upon nerves or blood vessels. They set to work to qualify themselves better and, I am told, are becoming more proficient every day. However, as a personal contribution on the subject, I must say that the cases that I have known treated by this pugilistic system have caused me to think there was a great deal of charlatanry about it. This may be putting it rather mildly. To one who is not "next" it is difficult to understand how a vertebra that is twisted out of plumb and bound down by the adhesions of years can be satisfactorily adjusted even by the most heroic manipulations. They inform me that they do these things. It is certainly a remarkable stunt; I know no other term so eminently fitting. Neither can I understand how they so often find depressed ribs which dig into the lungs, liver or other soft tissues and produce harrassing and unceasing coughs, hepatic torpor and numerous other troublesome symptoms. I can understand that a table of the skull or a spicule of bone anywhere pressing upon a nerve or vital center or even important blood vessel may produce a mountain of trouble, but I do not see how any amount of rubbing can dissipate and melt away this offending osseous tissue. Surgical intervention would seem to be the only way out of it. I seriously question the salutary effects of osteopathy upon firmly entrenched organic conditions aside from the hopeful and expectant attitude of mind which it creates. The massage may be worth a little. That tension is relaxed so that the blood and other fluids and secretions may the more freely ebb and flow, is colloquially known as hot air. It is a trick of the trade, the ilk of which this branch of healing seems all too full.

Another secret of the success of osteopathy is the personality of the men and women who follow it. For the most part they are people of culture and attainments and know how to approach their patrons and handle them in that way and manner most profitable to the one and pleasing to the other. They diligently try to throw about themselves an esthetic atmosphere and successfully create the impression that they are removed several stories above the ordinary groveling medical man. They study the personality and human side of their patient as well as the diseased condition at hand. Everything of psychotherapeutic value is taken into account and made the most of, just as any physician should. An osteopath who treated a neurotic lady near me began by excluding visitors. Who could have struck a happier keynote? Everything is planned according to effects and sequences. Another powerful factor for success with the osteopath is that he does not cater to people in the lower strata of life; the common pill doctor must look after this class and waste his time visiting them or having them muss up his office. The osteo does not do a cheap business. He

may put a good deal of dynamic qualities into his treatments, but he gets well paid for it. People as a rule appreciate what they pay a good price for; it matters not whether it be rations or rubbings. The character of their clientele, the prices charged and the environmental conditions being what they are it is not surprising that their services are quite generously sought. Still another factor contributing to the success of osteopathy and other "bloodless" methods is that many are disposed to turn to something of the kind in self defense. The hospitals and the surgeons in charge of them are making so strong a bid for patronage and the craze for operations has such a grip on the public at large that a natural revulsion is setting in. Many persons these days are actually afraid to complain of a pain below the girdle lest they be railroaded off to the nearest hospital and there operated upon for appendicitis or something else. A young man said to me recently: "I would have sent for you sooner, but was afraid you would advise an operation." His was a slight hepatic trouble—an old-fashioned "bilious attack." The big guns at the head of the profession are striving diligently to educate us all into the belief that surgical diseases are the only kind worth while. The recent graduates all have surgical ambitions and aspirations that are only equaled by the young girls who have a penchant for the stage. The surgical ward beckons and therein seems to be the realization of fond hopes and dreams. Not only the tyro in medicine desires the glitter and glamour of the surgical arena, but many of the older fellows want to break into the game and get rid of the drudgery of dull general practice. "The money is all in surgery," is echoed far and wide. With so many pulling for it the tide is all turned toward the hospital and its operative clinics. Nearly every doctor these days feels competent to pull off major operations and to acknowledge oneself unprepared to tackle them is a self-confession of being a back number. With everybody rushing into it, surgery the greatest boon to afflicted humanity, has ceased to be conservative. Many needless operations have been performed and a considerable element of the public are throwing up their hands in fear and horror. In fact the public is ceasing to be conservative now and often refuse operations when absolutely necessary. So many people are turning to any less sanguinary methods that offer the proverbial straw of hope. Osteopathy seems to get more than its share of recruits. The so-called therapeu-nihilism agitation is also instrumental in detracting from regular medicine and adds material strength to the near-medical cults and systems.

Inguinal Hernia.—Cocain locally in 0.1 per cent. to 0.2 per cent. solution is believed by A. S. Morris (N. Y. Med. Jour., Oct. 10, 1908), to be the ideal anesthetic in operations for this condition. In a large proportion absolutely no pain will be complained of; amputation of the omentum and separation of adherent gut may be comfortably accomplished in these circumstances. At most the pain inflicted throughout the operation is less than that produced in opening an infected finger. (But there are few things less painful than that.)

RETROSPECTIVE

Hemorrhage.—W. D. Haines (Lancet Clinic, Nov. 21, 1908), observes that such surgical emergencies as perforation by stomach or duodenal ulcer, ruptured appendiceal abscess, strangulated hernia, ileus, crushed limbs, fractured skull, gunshot wounds of the viscera and internal or external hemorrhage, do not always require great diagnostic skill; but they do necessitate experienced judgment in the determination of methods and time of instituting measures for their relief. Hemorrhage following tubal rupture in ectopic gestation, though seldom fatal in the sense of "bleeding to death," should nevertheless be placed in the category of emergency surgery. Haines quotes Krug's article (Surg. Gynec. and Obst., Oct., 1908), concerning immediate and deferred operation for the relief of intra-abdominal hemorrhage due to tubal pregnancy, in which the present day status of the procedure in such cases is given. Tubal pregnancy, believes Krug, is amenable to surgical interference only; the question remaining is when to operate. This should be done immediately the diagnosis is established, if this be made prior to rupture. The earliest symptoms of rupture are not followed by severe hemorrhage or shock, and if the case is recognized at this time operation should be done at the earliest possible moment consistent with proper surgical surroundings. But how should we proceed in the presence of severe hemorrhage and shock; shall we wait until shock is overcome, or shall we strike boldly at the cause, ligate the bleeding vessel and take chances by adding the shock of operation to that already present? Argument here hinges upon the differentiation of shock and hemorrhage; "the physical signs of both being so much alike, it is often well nigh impossible, even for the most experienced, to determine beyond a reasonable doubt where the greater danger for the patient lies, and to steer her clear of Scylla as well as Charybdis." Cases complicated by trauma, such as dilitation and curettage for supposed incomplete uterine abortion, or a bimanual examination, may produce rupture of the sac, followed by severe hemorrhage requiring immediate operation. Krug has never seen, in non-traumatic cases, an alarming hemorrhage accompany the first onset of rupture. If the patient seeks advice for the colicky pains announcing the early separation of tissue preceding complete rupture the true condition may be recognized and further trouble averted by a timely operation. We should condemn roundly the failure to recognize tubal pregnancy in this early stage, when narcotics are administered and the case is thus permitted to rest until complete rupture and fatal hemorrhage occur. The general practitioner must be educated to a full realization of the danger of delay in the presence of early symptoms; and the necessity of referring such cases, when in doubt, to those who have had special training in the recognition and management of tubal pregnancy. Unfortunately most cases are in profound collapse on arriving in hospital; in each case the question of immediate or delayed operation must be sarefully weighed, the outcome depending largely upon the wisdom displayed in formulating conclusions with reference to time of operation. Formerly Krug op-

erated upon all such cases as soon as they were admitted, with "good but not entirely satisfactory results." The delay in reaching him would necessitate the substitution of the house surgeon for the chief; or he would open the abdomen in the face of profound shock to find but a small clot and all bleeding stopped. An occasional infection, due to lack of proper preparation and other undesirable features of "rush operations" led him to reconstruct his plans. He now waits a reasonable time for subsidence of shock, remaining prepared to operate immediately should occasion require. Since pursuing this course he has lost no cases; and many have been saved who would otherwise have succumbed. Among 100 such cases he has had a mortality of two; one of which died of an ether pneumonia, the result of sepsis. No case died of hemorrhage. The time of operation varied from several hours to four days. No intravenous injections were given prior to operation. Heat, morphia and elevation of the foot of the bed were employed to relieve shock. If the pulse improved within a half-hour active hemorrhage was assumed to have ceased and operation was planned. "Since we can never hope to prevent ectopic conception we must try to do the next best thing—early diagnosis, followed by early surgical cure of this most treacherous disease of women."

Flushing the Intestinal Canal.—Monks (Am. Surg., June, 1908), makes a free incision through the abdominal wall in the median line from the pubes to or above the unbilicus; picks up a loop of bowel high up in the wound, determining by reference to the root of the mesentery which is really the upper and which the lower end of this loup (an essential step, in order to know in which direction the salt solution will flow during the process of flushing. He makes an enterostomy wound in the loop; allows gas and feces to escape; inserts the tube into that arm of the loop which leads in the direction of the ileocecal valve (inserts the tube pointed downward into the gut). Below this opening he allows warm salt solution gradually to distend a few of the loups; if nothing more than this is done in the way of washing, the substitution in the bowel of the warm salt solution in place of the gas and feces that have escaped will presumably help the patient. If the patient's condition will allow it the loop which is apparently the lowest of those distended is picked up; and in this a second opening is made and a second tube (directed upward) is inserted, and the wash water is allowed to run through until it is clear. The first enterostomy wound is carefully cleansed and sewed up; and that part of the bowel which has been washed out is returned to the abdomen. This procedure is repeated as many times as is safe, a segment of intestine lower down being each time isolated and cleansed. If the patient's condition will permit further operating the colon is filled with salt solution from the lower enterostomy opening, and a rectal tube is inserted for the removal of any wash water or intestinal contents which may reach the rectum. This tube should be inserted before attempting to close the abdominal wound; thus it is easier, by removing some of the wash water in the colon and diminishing its size, to bring together the edges of the wound. Great gentleness is used in all manipulations, particularly to avoid contamination of the peritoneum; the method of protecting the intestines between the two layers of rubber dam is likely to prove very serviceable. When peritonitis is also present that cavity should be washed out thoroughly both before and after flushing the intestinal canal. Monks does not consider flushing the intestinal canal to be in all cases a substitute for tubage of the intestine, or even for ordinary enterostomy. Flushing would seem to be called for only in the most desperate cases—in which the bowels are greatly distended, and when the patient, overwhelmed as he is with septic or toxic products, will die unless immediate relief is afforded.

"Serum Diseases" and Anaphylaxis.—Saunders (Interstate Med. Jour., July, 1908), notes that very soon after the discovery and general use of diphtheria antitoxin there appeared a group of phenomena following the hypodermic injection of bactericidal serum, to which the name "serum disease" is now given. These symptoms generally consisted of eruptions and joint pains; we regarded them as uncomfortable, though harmless after effects in susceptible individuals, and attributed the rashes to some toxic substance in the horse's blood serum. This was in error; the symptoms observed were only a few of the phenomena attending a very severe internal disturbance, really due to the introduction of heterologous proteids in their circulation. Remarkable changes do indeed take place in the organism injected with the serum. Although such symptoms are not manifest in more than one-third the cases, the cellular reaction to the alien serum is probably present in every injected individual; and the phenomena of anaphylaxis may be observed to greater or less degree upon the making of appropriate tests. In from ten to 40 per cent. of the injected cases the patient, after a period of five to twenty days, becomes restless and may complain of lassitude and pains in the limbs. Soon the serum exanthem follows, oftentimes accompanied by severe itching and burning. This rash varies in character; generally erythematous rose-red patches will cover various regions; next in frequency are urticarial lesions; sometimes the eruption is distinctly scarlatiniform; it may resemble measles; it may be polymorphous—whereas patches and macules being in various parts at the same time; there may be a typical erythema multiforme or erythema iris, with severe constitutional symptoms, especially after repeated serum injections. Oedema of the skin may be present, but only in certain circumscribed spots, or more rarely involving the whole skin, when it gives the patient a ghastly, blooded appearance; a very serious (and fortunately rare) type is that in which hemorrhages occur in the skin. There are also lesions in the mucous membranes; erythematous spots may occur on the hard and soft palate; the fungiform papillae on the tongue may be swollen, giving it a raspberry appearance. A very remarkable symptom is dysmenorrhoea in women; if a dose of diphtheria antitoxin is received within a fortnight of the menses there is very likely to be pain and an increase in the subsequent flow. Joint and muscular pains are frequent; one or more joints may become very tender to touch

and to movement; there may be joint swelling—of wrists, knees, hips, elbows, ankles and shoulders. The disease is a general disturbance, since temperature is frequent; the fever may be very high; in a ..... proportion of cases vomiting and diarrhoea occur. In some cases Saunders, after repeated injections in babies, observed the sensitizing effect of a previous injection; many of the infants that had six weeks previously received an immunizing dose showed a very marked supersensibility to the second injection; the symptoms of serum disease which are usually delayed a week or more, came on within a few minutes, and with much greater violence. The conditions of anajhylaxis are sometimes remarkably protracted. Thus in a little girl who received a diphtheria antitoxin injection four years previously, another injection of the so-called globulin antitoxin produced violent symptoms within a few hours. In experimental anaphylaxis Rosenau and Anderson found the condition persisting for severa! months. This hypersensitiveness may remain throughout life in certain individuals, and may be transmitted to the offspring, as in guinea pigs. The symptoms of the second reaction are very like those of the primary disease; but they supervene very soon after the second injection, sometimes within a few minutes. There may be chill, convulsions and sudden high fever; rapid pulse and respiration; great anxiety; in some cases severe dermatitis, with pain at the site of the injection—these phenomena are characteristic. A case has been reported of local gangrene, a condition frequently occurring in anaphylactic rabbits. Saunders has found no human deaths to result from the repeated injections of horse serum; yet the occasionally severe symptoms and the fact that gangrene and death are so frequent in animals would indicate that antitetanic horse serum is a remedy by no means to be used carelessly or indiscriminately. Another form of supersensitiveness occurs in some who have not had a previous antitoxin injection, here the immediate serum reaction has occurred, and yet the patient had never before had a dose. No explanation is at present forthcoming except that of idiosyncrasy. Finally, a form of sensitiveness is found in those rare instances in which sudden death occurs after an immunizing or curative dose of diphtheria in those injected for the first time; this is especially so in patients with asthma, Graves' disease and lymphatism. A number of cases have been reported. The symptoms here resemble in general those of animals made supersensitive to serum, and receiving a fatal dose. Severe dyspnoea, rapid respiration, cyanosis, intense dermal oedema are the prominent symptoms; death is from respiratory paralysis. Without question the anaphylaxis in these patients is similar to that produced in animals, though we are entirely ignorant of the cause and have, unfortunately, no way of recognizing its presence until after the serum injection. An important condition incident to he serum disease is that the general bacterial or antitoxic resistance of the body is lowered during the height of the anaphylactic stage. Diphtheria cases with relapses at this period have been reported; cases have also been observed of streptococcus infections; erysipelas, dysentery and chorea which have improved under the serum injections, but have rapidly become worse during the height of the serum disease. It were therefore not wise to use an antitoxin or bactericidal serum if its curative effect cannot be had before eight or ten days. The following are practical rules: Curative sera are not the harmless substances they were originally presumed to be; immunizing injections of serum should not be employed when isolation (with a reasonable degree of certainty) will prevent the disease, and when the children can be watched; serums should not be used in asthmatics or atients with Graves' disease, or with the lymphatic constitution, except in developed diphtheria; the use of bactericidal sera of doubtful value should not be encouraged, without careful consideration of all the possible bad effects from anaphylaxis; if a second dose of serum must be given during the few weeks following a primary injection, small repeated doses are preferable to a single large dose; on the other hand one single large dose is probably less harmful and far more effective than several small doses given over several days.

Rheumatism as a Cause of Appendicitis.—The article of Dr. Beverly Robinson on this subject in the Medical Record, Sept. 14, 1895, page 373-274, is confirmed by Dr. Eustace Smith, in the British Journal of Nov. 28, 1908, concluding as follows: "I have seen not one or two, but many cases of appendicitis, in which the question of operation was being considered, which underwent such rapid improvement under anti-rheumatic treatment, that all idea of surgical interference was quickly set aside. If the treatment fail—that is, if no improvement be noticed within thirty-six hours of taking the first dose of the salicylate (which should be of substantial quantity and given every three hours)—the assumption of a rheumatic origin for the inflammation may be definitely ignored."

Influenza and Typhoid Fever.—In the later convalescent period of certain cases of influenza and typhoid fever, says Dr. Beverly Robinson (Jour. Med. Sc., Dec., 1908), particularly when the heart remains weak and slightly dilated, I am confident that the Nauheim treatment, wisely given by experts, is often of unquestionable and great value.

In a suggestive and eminently practical paper, Dr. W. Parker Wooster directs attention lately to the great value of affusions and other methods of using hydrotherapy in the convalescent period from any disease, "when death seems imminent from heart failure and when free stimulation with drugs had been made." More or less ineffectually affusions increase arterial tension and restore resistance in vessels when the heart requires them urgently.

In instances of sudden heart failure occurring during the early convalescence of acute infectious disease, suprarenalin or adrenalin by the mouth in tablet triturates, each containing 1-20 grain, or preferably in hypodermic solution of 1 to 1,000, is unquestionably very useful, as has been frequently observed. Personally, however, I have learned to place great reliance upon tincture of strophanthus by mouth and hypodermically, and I do not feel like abandoning it at present for the newer drug, until I am satisfied it is more advantageous under like circumstances; in view of the fact that strophanthus acts almost wholly

as a very rapid and efficient heart stimulant, whereas adrenalin acts almost as much in contracting small peripheral blood vessels and thus raising vascular tone as it does in giving power to the heart itself. This double action, it seems to me, might be prejudicial instead of beneficial in those cases in which there is no vasomotor paralysis and which do not require the heart to be stimulated by increased functional vascular power.

Alcohol in Alimentation.—Disbelieving in its value as an aid to muscular effort, Lussana and Albertoni (Il Policlinico an xiii, fasc. 24) drew the vote of the International Congress of Occupation Diseases and opposed Treves and Casarini. The latter refused to consider alcohol as of value in any instance, but Albertoni sees no objection to wine for those of limited dietary unless working under conditions of low temperature.

Asthma of Tuberculous Origin.—Piery (Il Policlinico, an xiii, fasc 26) considers the interest with which one discovers behind an attack of asthma some pulmonary site of tuberculosis, and asserts the probability of this discovery in many, one might say any case of obscure asthma. Resort to serodiagnosis may be necessary. It is claimed that the output of chloride in the urine is lowered in chronic fibroid phthisis, associated with asthma. Piery advises arsenic and iodid of potassium as sovereign remedies once the diagnosis of tuberculous asthma be established.

Proper Site for Gluteal Intramuscular Injections of Mercury.—Mario Truffi (Il Policlinico, an. xiii, fasc 38, p. 1228) gives credit to the method of Scarenzio for the general use of these injections. Smirnoff prefers the retrotrocanteric region, Galliot a point two fingers above the great trocanter and four behind it, Fournier the highest third of the surface of the buttocks. Truffi suggests a point determined by an oblique line drawn from the posterior superior spinous process of the ilium to the summit of the trocanter, one choosing any spot above this and so avoiding the perils of proximity to structures of the sacrosciatic foramina. The needle should be about 3 cm. in length.

Candle in Bladder Following Attempt at Abortion.—A. Sacchi (Il Policlinico, an xiv fasc 6, p. 175) reports the case of a woman of 40 who having missed menstruation two months tried to bring on what she intended to be an abortion. The consequences were illness and a perioophoro-salpingitis of the right side, treatment for this and metritis being followed by vescicle symptoms and the discovery of a foreign body whose nucleus proved to be a candle. The candle was covered with calcareous matter. One similar case is recorded by Pisani, in the Tribuna Medica.

Harm of Night Work.—L. Carozzi and Gardenghi (Il Policlinico, an xiii, fasc 24) report to the International Congress for Occupation Diseases (Milan, 1906), that experiments prove a reduction in hemoglobin and blood iron in those who are deprived of sunlight. Crisafulli adds that night workers are desocialized in losing their part in normal human affairs. Giglioli believes that daytime repose is less restful and recuperative. The Congress passed a resolution that no female, and no male under 18 years, ought to be allowed to engage in night occupations regularly. When necessity compels any man to work at night he ought to be under medical examination at intervals, and have frequent changes of schedule, and periods of vacation.

Pulsation of Trachea, Larynx and Tongue in a case of Pericardial Effusion.—A Santini (Il Policlinico, an. xiv, fasc 22, p. 684) of the Civic Hospital of Ascoli Piceno, reports the case, saying that while no other cases are on record he believes that the symptoms would prove valuable in any pericardial effusion of some magnitude. In this instance the quantity on necropsy was about 1200 ccm. The pericardium was stretched until a part of it had been forced up to the tracheal bifurcation. A bilateral hydrothorax had existed. So that he attributes the transmission of impulse to the diastolic expansion of the heart and the consequent increase in pressure of the fluid in the pericardium—which, by reason of the thoracic complication, carried to the trachea the several cardiac impulses.

Infantile Tuberculosis.—F. Valagussa (Il Policlinico, an xii, fasc. 22, p. 681) speaking before the Fifth Italian National Pediatric Congress, drew emphasis to the conflict of opinion in regard to heredity and to the danger of primary infection of the alimentary tract. He warns us to accept opinions not more readily because of the luster of great names. The words of Jakobi: Primum non nocere—are to be heeded. How can we reconcile the view that infection of the digestive system is rare (Biederth, Freeman) and the view of the danger of milk infection (Behring). Virchow still insists that he has never seen a genuinely proven case of congenital tuberculosis. Valagussa believes that infection is most often contracted from tuberculous sputum.

Banti's Disease.—Arcangeli (Il Policlinico, an. xiv, fasc. 22, p. 688), disbelieves in a "commonplace" etiology, and suggests that the spleen will prove the habitat of some specific micro-organism. He says that it may be classed with the micro-organism of infantile splenic anemia endemic to Forio d'Ischia (Pianese) or the Donovan bodies of Kala-azar in India. In one of two cases he reports, he established the existence of a pronounced leucopenia, namely of about 4,000 whites.

Rare Malposition of the Intestine Causing a Postiliac Laparotomy.—Sante Solieri, of Sienna (Il Policlinico, sect. an. xiv, fasc. 3, p. 114), reports a case of tuberculous peritonitis occurring in a woman of 30, married, and because of anomalous position of the cecum a second operation became indicated. The death of the patient occurred. Necropsy is detailed. The anatomic interest centers upon the fact that the stomach of the woman had remained in its primitive vertical relation. The duodenum remaining in position to the right, and the mesoduodenum had never united with the posterior abdominal parietes. Plates accompanying the articles illustrate the striking similarity to primitive fetal conditions; what may have caused this instance of anomaly escapes our power to know. Queno in two cases of movable cecum (1906) and others relate similar anomalies.

Gastric Lavage in Delirium Tremens.—S. S. Serguievsky (Wratebraya Gazeta, 1906, n. 1, and Il Policlinico, an. xii, fasc. 38, p. 1238), adopts this treatment. After a brief tepid bath, and purge, lime

water is employed to wash the stomach. A small quantity of bicabonate of sodium is added to the lime water. Then ten drops of a mixture of equal parts of tincture of opium and tincture of nux vomica are given to the unhappy sufferer, who rarely fails to go to sleep when put to bed upon this, and who awakes very usually free from the disturbing mental symptoms of his condition.

Reform in Medical Study.—In speaking of the outcome of the recent Congress of Practitioners (France) Lucas Championniere says editorially (Journ. de Medecine et de Chirurgie pratiques, 1908, p. 529): Too much attention is paid by students in hospitals to the great operations, which rarely they may be called upon to do; and the strange and rare diseases, which even more rarely they shall meet. The opening of abscesses, boils and carbuncles, the applications of blisters or leeches, massage, venesection, etc., all in a word which is to constitute the reality of their future practice is apt to be received with disdain, or disregarded. Championniere smiles at the discussion which always forgets the obligation due the charity case, and inquires whether the student is able to carry out what the state and the institution owes such a case. But he admits that the interest of the student may make up for want of experience. (It must be added that the medical student has no reason to be charged with intentional carelessness, each case coming to him with all the appeal of novelty and surprise, and that teachers are more than ever watchful of their methods before the eyes of a class.)

Lumbar Puncture.—E. Guglielmetti (Il Policlinico an. xiii, fasc. 24) reviewing a magistral contribution of Quincke, draws attention to the advantages above all in cases of acute cephalorachidian exudation. The symptoms of pressure disappear either during or soon after the operation. Headache is relieved. Paresis, optic symptoms and aphasia all are favorably affected. A slow withdrawal of the fluid is advisable; rapidity may cause meningeal hyperemia and congestion of medulla and brain, or even minute hemorrhagic discharges which would be followed by degeneration of the cell nuclei. Three factors bring on consecutive disturbance: (1) change from horizontal position, (2) ingestion of alcohol, (3) activities of mind or body.

Insomnia of Arteriosclerosis.—Editorially Il Policlinico (an. xii, fasc. 24, p. 756) suggests:

℞ Strontii bromid..... 12 grams
Ag. menthae piperitae.
Syrup simplicis, aa..... 20
Aquae 120
M. Sig. One tablespoonful before going to bed.

Symptoms on the Left Side in Appendicitis.—Burckhardt, of Wuertzburg (Il Policlinico, sez. practica, fasc. 23, 1907), gives three categories: (1) When in chronic cases some extension of the septic process has begun secondary changes extending to the left. (2) In cases in which it is believed the appendix by abnormal positions points to the median line. Anatomists are familiar with different positions of the appendix, the exact proportion of cases of leftward anterior pointing not being established, the practitioner must watch suspicious cases in which the symptoms upon the right side are slight or absent, either due to diminution of the activity of suppuration or subsidence altogether. The third class of cases is rare, but must always the more be held in mind, namely that of visceral inversion, and left-sided appendix. To the cases of the second class belong those of left hernia into which an appendix and cecum have become drawn over.

Gasbacillus of Fraenkel-Welch.—N. Pende (Il Policlinico, an. xiv, fasc. 15) draws our interest in his very clear communication to the Lancisian Society of Rome, telling of a case of fever lasting over 50 days, giving rise to ascites, meteorism, diarrhoea and general adynamia. The patient seemed to recover, but in spite of the subsiding fever the other symptoms persisted, and one day in going to sit upon the edge of the bed the patient suddenly fell dead. She had presented early symptoms of hypertrophic cirrhosis of the liver—the fever, of a quotidian type, would last three or four hours, occurring with chill and ending by sweat. But the notable symptom was the odor as of a fatty acid which emanated from her entire body. Necropsy disclosed changes affecting every organ. And the characteristic odor pervaded every tissue. It is supposed that the micro-organism in the fluid is dispersed through the various tissues, and in this case was recovered and in culture gave out the same odor as had arisen from the tissue, intra vitam, of the unfortunate woman.

Perforation After Gastric Ulcer.—Morton (Bristol Medico-Chir. Jour., Sept., 1908), has operated on ten cases with three recoveries. After the sudden violent onset there is often a latent period which may be deceiving. In two of these cases appendicitis was diagnosed. (Morton reminds us that in 19 out of 51 cases of duodenal perforative ulcer collected by Moynihan a diagnosis of appendicitis was made. The latter surgeon attaches most importance to rigidity of the abdominal wall, though in one case, in which there was general peritonitis, there was neither rigidity nor tenderness the patient being profoundly collapsed.) Sharp abdominal pain, vomiting, distention and collapse may occur at the beginning of menstruation and may closely simulate perforating gastric ulcer. The pelvis should be examined in all cases if not by a separate opening, at any rate by inserting into it a sponge on a holder. If fluid is found suprapubic drainage should be practiced. The right kidney pouch and left loin can both be drained by long split tubes with gauze wicks from the anterior abdominal wound; but in some cases of very extensive infection of one or other loin a counter-opening may be advisable. Drainage is practiced in every case; all of Morton's cases were anterior perforations.

Pneumonia in Infancy.—The lobar type is rare in infancy, states R. G. Freeman (J. A. M. A., July 25, 1908), and the pneumonia should here be recognized independently of percussion or auscultation, such signs being valuable to corroborate the diagnosis and to locate the lesion. The clinical picture usually suffices for an accurate diagnosis. The symptoms are sudden onset, depression, rapid respiration (the ratio to pulse being 1 to 3), fever and usually cough. If with these are noticed flaring nostrils, pneumonic breathing and expiratory grunt, a definite diagnosis

may be made, while rigidity of the neck and upper extremities without rigidity of the lower extremities is (if present) an important confirmatory sign.

Malaria and Early Tuberculosis.—P. H. Ringer (Med. Rec., Oct. 3, 1908), makes an important differentiation. Clinically chills, with a definite and rapid rise of temperature, indicate malaria; in this disease fever drops by crisis, in tuberculosis by lysis; sweating is more profuse in malaria, malarial bronchitis is diffuse at the base, the tuberculous variety at the apex. Rough breathing at the apex indicates tuberculous involvement, probably discrete tubercles. Repeated laboratory findings are important. Even if all examinations are negative, a slight change in breath sounds at one apex, with fever and malaria, indicates tuberculosis. Quinine will cure malaria; it will have no effect on tuberculosis.

Gastric and Hepatic Tuberculosis.—Winternitz (Bull. Johns Hopkins Hosp., Aug., 1908), finds that tuberculosis of the stomach may come about in the following ways: By continuity or contiguity of structure, probably the most frequent mode, by hematogenous infection as part of a general miliary tuberculosis; by ingestion of tubercle bacilli, through a healthy mucosa, or where there is some predisposing change in the mucosa. Tuberculous cavities in the liver will be found directly in proportion to the care with which one looks for them. They are of two general types: (1) Entirely independent of the bile passages and containing neither bile nor bile-duct epithelium; and (2) cavities containing bile and bile-duct epithelium. Of the latter are those arising from an ascending infection of the bile passages; and those arising from secondary involvement of a bile-duct in a caseous mass. These two types cannot be distinguished microscopically; because as soon as a cavity is found the bile-ducts will be a factor in the spread of the lesion. It will also be impossible to say whether a cavity has formed from a single bile-duct, for the epithelium will disappear after the cavity has attained any considerable size, and its branches will empty into the cavity. Bile has no deleterious effect upon tubercle bacilli; these rapidly undergo degeneration in the liver, however, perhaps by reason of some natural immunity which the liver shares with other organs rarely affected by tuberculosis (as the pancreas, thyroid and testicle).

Fistula in Ano.—J. B. Dawson (The Hospital, Aug. 29, 1908), proposes a palliative treatment. The external orifice is dilated to promote better drainage (bougies, expansile tents or nicking with a scalpel). The anal region is attended to daily; it is thoroughly cleansed with soap and water, then a mild antiseptic is employed (2 per cent. carbolic); excoriation or pruritus of the skin around is treated. There is irrigation of the rectum (a mild unirritating antiseptic being used) after defacation, so that it there is an internal opening it will be free from contact with fecal fragments. An antiseptic (hydrogen peroxide, 20 per cent. vol; lotio acidi carbol, 2 per cent; lotio acid boric; emulsio iodoformi, 5 per cent.) is injected along the tract of the fistulas by means of a glass sinus nozzle attached to a tube and funnel. Cod-liver oil, malt extract, iron, strychnine or nux vomica, syrup of hypophosphites or of phosphate of iron, with quinine and strychnine, change of air, rest or a sea voyage, prohibition of cycling, rowing, riding or excessive walking are indicated measures. The bowels must be regulated (calomel gr. j. t. i. d.; sulphate of soda, ℥i. on rising; or this confection: ℞ Pulv. jalap comp., gr. xv.; pulv. senna cilerandrinae, gr. xv.; sulph. praecip., gr. xx; aqua destill., ℥i.; theriacae opt. ad. ℥i.

A New Blind Book Process.—What is to be known as the "point" system of reading for the blind has been perfected by Wm. B. Wait, principal of the New York Institute for the Blind, and B. B. Huntoon, the Superintendent of the American Printing House for the Blind at Louisville. The cost of printing such literature is expected by this means to be decreased forty per cent.; thus many more among the unfortunate blind may be able to purchase reading matter and thus add greatly to their pleasure in life, dreary enough as life is for them under the most favorable circumstances. Hitherto because of the raised "tactile" surfaces only one side of the paper could be used; but by the system of Wait and Huntoon both sides can be used, the embossing on one side of the page being between the lines of the embossing on the other.

Uniformed Amazons recently cantered through London streets. They were not militant suffragettes in a new guise, but a section of the Girls' First Aid Nursing Yeomanry Corps; and on the occasion reported they were about to pay an official visit to the St. Bartholomew's Hospital at the invitation of its staff. These young ladies "wore smart, tight-fitting scarlet tunics, with white facings, skirts of blue serge braided with white flat, military caps of scarlet and white, riding boots and gauntlets; they were exceedingly well horsed and rode with the erect, immovable seat of the trained cavalryman."

Bunion.—C. H. Mayo (Am. Surg., Aug., 1908), finds this lesion to be developed in feet with the great toe one-fourth to one-half inch longer than the second toe, as a result of confinement in tight, narrow-pointed and especially short shoes. He operates: A curved incision, base down, through the skin over the inner side of the metatarso-phalangeal joint; the flap of skin and fat is turned down and dissected off from the burser; a "horse-shoe" incision is then made, base forward, left attached to base of first phalanx, the deep surface being covered with synonial membrane continuous with the joint; heavy forceps are used to cut off the head of the metatarsal bone, including the bony outgrowth on the inner side of the head; the synovial flap is turned in to complete the joint surface and fastened with catgut sutures; strands of silkworm gut or catgut are used to drain through the puncture in the base of the skin flap; the skin is sutured. In 65 cases Mayo has had good results.

Lobar Pneumonia.—T. F. Reilly (Arch. Diag., Oct., 1908), observing the patient's sense of weight in the affected side, of the hepatized lung, has found on questioning patients that as soon as the sense of acute pain due to the accompanying pleural affection has passed off, a sense of weight or of a load is felt; this should be a valuable sign in the early diagnosis of lobar pneumonia.

MISCELLANY

Dr. William Nevin Hill, who was famous in Baltimore through his crusade against mosquitoes, died on December 26, after a three-months' illness from progressive paralysis and an encephalic tumor. As requested by him before his death, an autopsy was made; the tumor was not absolutely diagnosed during life, and Dr. Hill was anxious that his colleagues should know the basis of his sufferings.

The Gall-bladder and the Bile-ducts, states A. C. Wiener (Lancet-Clinic), are operated upon: to locate and remove all foreign bodies from their lodgings. The technique has been far enough developed to permit of their removal from even the remotest hiding place; to resect, so far as is possible, all diseased tissues; to drain off the infectious bile for a period of time sufficient to insure the return of normal secretion.

Oxygen in Pneumonia, if it is to prove efficacious, must be begun as soon as the disease declares itself. The inhalation should be continuous, night and day, and as long as any symptoms remain. It is worse than useless to wait until the patient is cyanosed and moribund before administering oxygen; though it may then give some temporary relief, it is too late to save life by this means, states G. Stoker (Med. Press and Circular, July 22, 1908).

Relapses in Croupous Pneumonia.—In three cases described by J. Bungert (Munch. Mediz. Wochenschr., Sept. 22, 1908), the patients were convalescing, when suddenly symptoms of renewed onset appeared; what seemed a repetition of the first attack was passed through. The shortest interval after defervescence before the relapse varied from three to 26 days; the site of the primary lesion was also that of the recurrence, which proved relatively mild.

Pelvic Abscesses.—H. Tillianus considers exhaustively the possibilities, especially the origin and the anatomical relations of pelvic abscesses (Deut. Med. Wochensch., Oct. 15, 1908). He traces the lines of least resistance along which the pus may burrow; shows how it may extend down to the knee or up through the diaphragm, how indeed, there is hardly any spot between or into which the abscess may not break. Details of treatment are elaborately set forth.

A Specific Eruption in Pneumonia.—F. M. Pope (Bost. Med. Jour., Nov. 21, 1908), found a crop of papules on the upper part of the back in one case; deep rose, circular, 3-4 millimetres in diameter, darker than the average typhoid spot; they disappeared completely on pressure. In three days the first crop faded and a second crop appeared; in another three days they became pustular; the pus showed pneumococci only; there was some resemblance to the smallpox pustule, though there was no vesiculation.

The Opening of the Mastoid is indicated in acute mastoiditis when there is tenderness over the antrum lasting three days after freely incising Schnapnell's membrane; if the discharge from the ear suddenly grows much less while other symptoms remain; a flow of pus too great to have been produced by so small a cavity as the tympanum, indicating invasion of the cells. Many surgeons, declares Leach (J. A. M. A.), consider a bulging of the postero-superior wall of the canal a positive sign of mastoid disease.

Evil Tendencies in Medicine and Surgery.—W. H. Richardson (Bost. Med. and Surg. Jour., Dec. 10, 1908), in concluding his paper suggests as a remedy thorough and persistent preparation for surgical practice by careful study; by abundant clinical temperament and the accurate weighing of evidence; by the exercise on every possible occasion of "control" over diagnosis; by the determination always to consider both sides of a question; and by assiduous preparation for the mechanical and technical steps of operative procedure.

A Tribute to Genius.—It is reported that but one habitable house stands in Messina, all the rest having been destroyed by the earthquake. This house was built by a man who spent years strengthening it with iron bars to resist earthquakes. The kindly disposed called him eccentric; those who were undisguisedly frank called him crazy. But he has to-day a roof over his head; whilst they are beyond all power to express their opinion of him. We might find instances analogous to this in our own professional history—Semmelweis, for example.

Adenoid Pneumonia, declares E. J. Bero (N. Y. Med. Jour., Sept. 26, 1908), is coincident with adenoid growths. The salient features are: very high temperature, not however corresponding to the severity of the illness or indicating an unfavorable prognosis; the temperature toward the end becomes intermittent, giving the impression of a number of pseudocrises; quinine does not modify it, nor does early puncture of the ear drum modify the course of the disease; the spleen is not enlarged; malarial plasmodia are not found; the course is often protracted; there is proneness to relapses when adenoid growths are not removed.

Pasteur Institutes in India.—One of these institutes for the treatment of hydrophobia is in full swing at Kasunli, in the Punjaub and on the road to Simla. Many Europeans come thence from near and far; and soldiers are sent by the government free of charge from all parts of the empire. (Med. Press and Circular). Some natives travel immense distances in order to place themselves under treament, although in most cases they cannot be prevailed upon to recognize the facts of the situation. Hydrophobia is dreadfully prevalent in India among dogs and jackals; but the disease should be as amenable to preventive measures in India, as they have proved in the British Isles.

Lamplighter's Arm.—The Medical Press and Circular observes that among the picturesque figures on the streets which modern science or modern manners is driving into oblivion there is none whose departure we regret more than that of the lamplighter. Not only has the lamplighter given us a simile for speed in movement, but also before he pursues the dodo into the shades of extinction let us remember that he has also given us a disease—"Lamplighter's arm," which is either a rheumatism or a myalgia in that member; this is due to a chilling of the limb by the constant trickling of rain from the pole into his sleeve, so that each time he lights a lamp a cascade is released upon his skin.

THE BLOOD IN INFANCY AND CHILDHOOD.

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PART I.

THE blood in infancy and childhood is markedly different from that in adult life. The change in the blood picture is very gradual, and no definite limit can be set when the change takes place, but as a rule it can be said that about the time of the eruption of the permanent teeth, that is, during the sixth year, it assumes the adult type.

Red Blood Cells.—The first thing that strikes one who examines a smear of child's blood is the irregularity in the size of the red blood cells. This irregularity may be very marked or it may be slight, yet it is constantly present. In the newly born the average number of red blood cells is about 6,000,000. After the first day the average is 5,500,000, gradually diminishing until the end of the second week when it reaches 5,000,000, and remains at this point. Nucleated red blood cells are present during the first three days of life; after that they are pathological.

The haemoglobin at birth is about 110 per cent.; this drops to about 100 per cent. by the end of the second week, and then takes a further drop to 70 per cent. by the sixth month. It remains at 70 per cent. until the end of the second year, when it gradually rises to assume the normal adult percentage about the sixth year.

White Blood Cells.—At birth the number of white blood cells is about 20,000. This drops at the end of the first week to 10,000, and gradually rises again to 15,000 at six months. At one year they have dropped to about 12,000, and from this time there is a gradual fall to 7,500, the adult average at the sixth year.

The differential count also varies at different ages. At birth the granular cells are 75 per cent., and the non-granular 25 per cent. At the end of the first week the relation is reversed, there being 55 per cent. non-granular and 45 per cent. granular. This preponderance of non-granular cells holds until about the third year, when the granular and non-granular are about equal. To be more explicit at six months the non-granular are 60 per cent. and the granular 40 per cent. At one year the non-granulars are 58 per cent. and granulars 42 per cent. At three years the non-granulars and granulars are each about 50 per cent. At six years the relation has assumed the adult type with the granulars 73 per cent. and the non-granulars 27 per cent.

It is necessary to bear these facts in mind because they must be used to gain an idea of the changes in differential counting. The results of the following counts are taken from blood examinations in 100 cases.

INFANTILE SCURVY.

In this constitutional disease, due to some error in diet, the blood shows anaemia, slight early, severe later. There is great reduction in Hb to 35 and 40 per cent. Also a reduction in red blood cells. Leucocytosis may be present. This is merely an anaemia of the chlorotic type. The coagulability of the blood is in no way lessened. The average coagulation time of five cases was 4 1-3 minutes, which is well within the normal, usually reckoned at from 2 to 8 minutes. Dr. A. E. Wright has found a diminished alkalinity of the blood in scurvy, both adult and infantile.

CASE 1:—Scurvy.—E. K., 2 years. Has been restless and cries when moved, left leg seems especially painful. Nose bleeds. T. 10.30. Elight thickening of left femur. White blood cells 21,800. Average normal at two years 11,000. Differential count polymorphonuclear 43.68. Lymphocytes 50 per cent. Large mononculear 4.42 per cent. Transitional 1.90.

Granular 43.68. Non-granular 56.32.

Average normal, granular, 45. Non-granular, 55.

The relative proportion of granular and non-granular cells is not altered much, although the absolute number of each is increased a good deal. As the case was not severe the anaemia was not marked.

DISEASES OF THE DIGESTIVE SYSTEM.

CASE II:—Pharyngitis Acute.—W. N. 9 years, male. Vomiting, headache, fever. Throat not complained of. T. 104; P. 160. Spleen palpable. Widal negative. Throat raw and red. Tonsils slightly enlarged.

White blood cells 39,240. Average normal 7,500. Differential count, polymorphonuclear 85.8. Large Lymphocytes 6.7. Small, 7.5. Granular 85.8. Non-granular 14.2. Average normal, granular 73 per cent. Non-granular 27 per cent.

Here there is a marked leucocytosis with a relative increase in the granular cells and an absolute increase in both the granular and non-granular cells.

CASE III:—Convalescence from removal of Tonsils and Adenoids.—H. P. female, 12 years. Both tonsils were very large and the hypertrophied adenoid tissue was abundant. Blood examination made 19 days after removal. Hb. 60 per cent. Red blood cells showed a moderate variation in size and had pale centers. Differential count. Polymorphonuclears 61.2 per cent. Eosinophiles 1.3 per cent. Granular 62.5 per cent. Lymphocytes 23.8 per cent. Large mononuclears 7.5 per cent. Transitionals 6.2 per cent. Non-granular 37.5 per cent. Average normal, granular 73 per cent. Non-granular 27 per cent.

This child had not yet recovered from the anaemia produced by enlarged tonsils and adenoids and as a result we see there is the usual accompaniment of anaemia, a relative increase in the non-granular cells and relative decrease in the granular cells.

CASE IV:—Gastro-duodenitis.—E. S. Male, 15 years. Pain in stomach. Constipation. Sclerotics yellow; urine very dark. T. 99, P. 100, R. 24. Red bood cells 3,264,000. Hb. 54 per cent. White blood cells 6,327. Differential count. Polymorphonuclears 30 per cent. Eosinophiles 1 per cent. Granulars 31 per cent. Lymphocytes 69 per cent. Non-granulars 69 per cent. Average normal, granulars 73 per cent. Non-granular 27 per cent.

The boy showed a slight decrease in the total number of white blood cells, marked diminution in the haemoglobin, marked relative increase in the non-granulars and marked relative decrease in the granulars. Four days later, the urine was still very dark, but the other symptoms had begun to remit. Blood at this time showed Hb. 49 per cent., white blood cells 7,400. Differential count. Polymorphonuclears 35 per cent., eosinophiles 1 per cent., granulars 36 per cent., lymphocytes 64, non-granulars 64 per cent.

Compared to average normal as above, this shows that with the beginning of improvement the relative proportions of the granulars and non-granulars were tending towards normal.

CASE V:—Gastro-duodenitis.—V. C. Female, 5 years. Has had fever. Sleeps poorly. Appetite poor, bowels constipated; movements light colored. Sclerotics yellow and skin yellow over the chest and abdomen. T. 99.4. Blood examination, Red blood cells 3,200,000. Hb. 57 per cent. White blood cells 7,200, average normal 8,300. Differential count. Polymorphnuclears 22 per cent. Mast cells 1 per cent. Granulars 23 per cent. Lymphocytes 77 per cent. Non-granulars 77 per cent. Average

normal, granulars 66 per cent. Non-granulars 34 per cent.

This child showed a slight diminution in the total number of white blood cells and a marked relative decrease in the granulars and a marked relative increase in the non-granulars.

CASE VI.—Catarrhal Appendicitis.—J. M. Male, 12 years. Pain in abdomen, vomiting, constipation. Tenderness over McBurney's point. Blood examination, Hb. 44 per cent, white blood cells, 10,200. This very slight increase in leucocytes is what is commonly met with in catarrhal appendicitis. In supurative and gangrenous appendicitis there is as a rule a marked leucocytosis, but more reliance is to be placed on a relative increase of granular cells than on the total number, and an absence of a relative increase in the granular cells shows an absence of severity.

CASE VII:—Catarrhal Appendicitis.—J. B. Male, 12 years. For the past two days has had "pain in his stomach," more on the right side. No vomiting, bowels constipated. Examination shows tenderness over McBurney's point, distinctly localized. Right rectus held rigidly. T. 100, P. 100. Blood examination shows Red blood cells moderate variation in size, round in shape, pale centers. Malaria negative. White blood cells 8,250. Differential count, polymorphonuclears 70 per cent. Eosinophiles 3.5 per cent. Granular 73.5 per cent. Normal 73 per cent. Large Lymphocytes 16.6. Small Lymphocyates 6.3. Large mononuclears 1. Transitionals 2.6. Non-granulars 26.5. Normal 27 per cent.

Patient recovered uneventfully in one week. This blood picture approximates very closely the normal, and shows nothing very serious was going on in the abdomen.

CASE VIII.Oxyuris vermicularis.—I. Q. Female, 6 years. The mother thinks the child has worms. She was told to bring a stool for examination, and this showed the presence of many small white thread like bodies scattered through it She snored at night, had a cough and was subject to night terrors. The adenoids were removed at a later period. Blood showed 53 per cent Hb. Red blood cells moderate variation in size, had pale centers, and were round in shape. Leucocytes 7,600. Differential count showed Polymorphonuclears 45 per cent. Eosinophiles 8 per cent. Granulars 53 per cent. Normal 73 per cent. Large Lymphocytes 35 per cent. Small Lymphocytes 3 per cent. Large Mononuclears 9 per cent. Non-granulars 47 per cent. Normal 27 per cent.

The changes due to the intestinal parasites I think are confined to the increase in the eosinophiles. This is not marked, but sufficient to be worthy of notice. The decrease in the polymorphonuclears and in the lymphocytes are what one would expect with marked anaemia, such as we have here.

CASE IX:—Retro-pharyngeal Abscess.—F. G. Male, 14 mons. Difficulty in swallowing, noisy respiration; lump in neck, head retracted. T. 101.2, swelling posterior pharyngeal wall, to left median line. Opened with sharpened finger nail. Much pus. Blood examination Hb. 51 per cent. White blood cells, 26,555. Average number 12,000. Differential count 532 white blood cells. Polymorphonuclears 49.1, Eosinophiles .7, Mast cells .3. Granulars 50.1. Lymphocytes 49.1. Transitionals .3. Large Mononuclears .5. Non-granulars 49.9. Average normal granulars 42. Non-granulars 58.

There is here a marked increase in the total leucocytes and a relative increase in the granulars and relative decrease in the non-granulars.

CASE X:—Retro-pharyngeal abscess.—S. A. Male, 6 months. For three weeks trouble in throat. Three days head retracted. Vomiting. Cry metallic. Face distressed. T. 99.4. Glands at angle of jaw large On posterior pharyngeal wall tumor, to right median line, fusiform. Opened with finger nail and much pus discharged. Blood examination, white blood cells 17,400. Average normal 15.00. Differential count. Polymorphonuclears 52 per cent. Eosinophiles 1. Granulars 53 per cent. Lymphocytes 4, per cent. Large Mononuclears 6. Non-granulars 47 per cent. Average Normal granuars 40 per cent. Non-granulars 60 per cent.

This again shows a blood picture similar to case preceding. A slight increase in the leucocytes and a relative increase in the granulars and relative decrease in the non-granulars.

DISEASES OF THE RESPIRATORY SYSTEM.

CASE XI:—Acute laryngitis.—C. S., 7 years, female; coughs and is hoarse for past two days. Tonsils slightly large and reddened. Glands of neck palpable. T. 100, P. 100, R. 20. Blood examination, red blood cells 4,484,000. Have moderate variation in size, pale centers. Hb. 62 per cent. White blood cells 24,000. Differential count. Polymorphonuclears 45 per cent. Eosinophiles 1 per cent. Granulars 46 per cent. Normal 73 per cent. Lymphocytes 51 per cent. Large Mononuclears 2 per cent. Transitionals 1 per cent. Non-granulars 54 per cent. Normal 27 per cent.

This shows a marked leucocytosis, but the increase is mostly in the non-granular forms. The differential count showing 54 per cent. non-granulars against 27 per cent. normally.

CASE XII.—Acute Bronchitis.—M. M., female, 9 mos. Has had a cold and cough for the past week. Lungs show sibilant and sonorous breathing and coarse moist rales. T. 99.2. Differential count. Polymorphonuclears 59.02 per cent. Eosinophiles 1.65. Mast cells .82 per cent. Granulars 61.49. Normal 73 per cent. Lymphocytes 37.69. Large Mononuclears .82. Non-granulars 38.51. Normal 27 per cent.

This shows a relative diminution in the granular forms and a relative increase in the non-granular forms.

CASE XIII:—Acute bronchitis.—A. T., male. Had Whooping cough one year ago. Cough for 1½ weeks, slight expectoration. T. 99.4. Lungs show medium moist rales at right apex and base. Hb. 60 per cent. White blood cells 7,400. After one week's treatment there was no improvement in the cough and the boy was vomiting occasionally after coughing. Lungs showed some localized signs at right apex and base. It was therefore thought that the signs were due to tuberculosis. But two weeks later the lungs had entirely cleared and the cough had ceased This illustrates what frequently occurs in children. A localized bronchitis is watched for a short time and the diagnosis is just about decided of a tubercular condition when the process clears up, showing it was not tubercular.

CASE XIV:—Chronic broncitis, emphysema.—N. P. Female 9 years. Has had a cough off and on for several years. Better in summer and worse in winter. Headaches sometimes. Examination shows a slight chronic pharyngitis. Cervical glands are slightly enlarged. Over lungs percussion note is hypo resonant; expiration much prolonged and low pitched. Few moist coarse rales in axillae. Heart shows soft systolic murmur (functional) at base and apex. Blood examination. Differential count. Polymorphonuclears 51 per cent. Eosinophiles 1 per cent. Mast cells 2. Granular 54 per cent. Normal 73 per cent. Lymphocytes 29. Large Mononuclears 15. Transitionals 2. Non-granular 46. Normal 27 per cent.

This shows a marked decrease in granular forms and a corresponding increase in non-granular forms over the normal.

CASE XV:—Asthma.—J. M., male, 10 years. Has had attacks of difficult respiration for some years, but has never had such a severe attack as the present. Lungs show "music box" chest; sibilant and sonorous breathing, and few medium moist rales at end of respiration. White blood cells 8,500. Differential count. Polymorphonuclears 24 per cent. Eosinophile, 8 per cent. Mast cells, 2 per cent. Granulars 34 per cent. Normal 73 per cent. Lymphocytes 66 per cent. Non-granulars 66 per cent. Normal 27 per cent.

This shows a marked increase in the non-granular forms and a marked decrease in the granular forms. It also shows what frequently happens in asthma, an increase in the eosinophiles.

As improvement occurred the blood tended more toward normal, a later count showing, granular 46 per cent., normal 73 per cent.; non-granular 54 per cent., normal 27 per cent.

CASE XVI:—Asthma.—M. F., male, 9 years. Has been coughing hard for some days. Wheezing at night. Lungs, medium moist rales, sibilant and sonorous breathing over both lungs. Respiration labored. Blood examination, red blood cells, 4,800,000 Hb. 51 per cent. Moderate variation in size, pale centers, round

in shape. White blood cells 23,800. Differential count. Polymorphonuclears 61 per cent. Eosinophiles 6.5 per cent. Mast cells 1.2. Granulars 68.9. Normal 73. Lymphocytes 30.5. Large Mononuclears .0. Transitionals .4 per cent. Non-granulars 31.3. Normal 27.

This shows practically the same blood picture as the above with not so marked an increase in the non-granulars and not so marked a decrease in the granulars. There is here an increase in the eosinophiles.

CASE XVII:—Asthma.—C. P., male, aged 13. For past three days has had a bad cough, difficulty in breathing, vomiting after coughing sometimes. Examination of lungs shows labored respiration, all accessory muscles being brought into play. Sibilant and sonorous breathing. Expiration is prolonged and low pitched. Blood examination, red blood cells, moderate variation in size, pale centers, round in shape. No leucocytosis. Polymorphonuclears 60 per cent. Eosinophiles 5.2 per cent. Granulars 65.2 per cent. Normal 73. Lymphocytes 34.8. Non-granular 34.8. Normal 27 per cent.

This differential count again shows an increase in the non-granular forms and decrease in granular forms, and increase in eosinophiles. All these blood pictures in asthma are very similar therefore.

CASE XVIII:—Broncho-pneumonia.—J. C., male, 11 months. Whooping cough 2 months ago. Cough has persisted. 5 days ago had 3 convusions. Vomited at first. Examination shows marked rickets. Purpuric eruption over back, buttocks and thighs. Umbilical hernia, small. Liver to level of umbilicus (prabably amyloid). Lungs, patchy consolidation over both lower lobes behind. Baby is apathetic and stupid. Weight 13½ pounds (average 19 pounds). T. 101.4 P. 166 and irregular. R. 76. This was in all probability a tubercular pneumonia. Blood examination, red blood cells, show some poikilocytosis and a few normoblasts in fields counted. White blood cells 11,200. Differential count, polymorphonuclears, Granulars 69 per cent. Normal 42 per cent. Lymphocytes. Non-granulars 31 per cent. Normal 58 per cent.

There is no increase in the total leucocytes. There is a relative increase in the granulars and a relative decrease in the non-granular cells.

CASE XIX:—Broncho-pneumonia.—H. F., female, 22 months. Has had whooping cough for two weeks. For the past 24 hours has been very sick, cough is more frequent, seems apathetic and dull. Examination showed consolidation over both lower lobes posteriorly. T. 104, P. 160, R. 52. Temperature later went up to 105 and pulse became weaker and weaker and death occurred about one week after the onset of the pneumonia. Blood examination showed marked leucocytosis, 30,000. Differential count 356 white blood cells. Polymorphonucleurs 74.2. Granulars, Normal 45 per cent. Large Lymphocytes 14. Small Lymphocytes, 9. Large Mononuclears, 1.7. Transitionals 1.1. Non-granulars 25.8. Normal 55 per cent.

This shows very well the result of the struggle between the bronchopneumonia and the whooping cough, the pneumonia producing the granular excess and triumphing while whooping cough, which by itself produces a non-granular excess, succumbs. This case shows a marked increase in the total leucocytes and a relative and absolute increase in the granular forms, and a relative decrease in the non-granular forms.

CASE XX:—Broncho pneumonia.—M. C. Female, 1 year. Whooped for about three weeks and then broncho pneumonia developed and ran its course. Cough was again becoming spasmodic, almost whooping. Examination showed a normal temperature for the past two days and that the areas of consolidation in both lower lobes posteriorly were resolving. Blood examination showed a moderate leucocytosis 15,000. Differential count of 361 white blood cells. Polymorphonuclears, 49.8 per cent. Mast cells .8. Granulars 50.6. Normal 42. Large Lymphocytes 32.3. Small Lymphocytes 9.9. Large Mononuclears 6.8. Transitionals 2.4. Non-granulars 49.4. Normal 58. Red blood cells stain irregularly, have pale centers and moderate variation in size.

This shows only a slight increase in the total leucocytes. Also a slight relative increase in the granulars, and a slight relatively decrease in the non-granulars. This is interesting in comparison with the above case, and answers the question how soon does the blood return to normal. We can, therefore, say just as soon as resolution is well advanced.

CASE XXI:—Broncho pneumonia.—E. R., male; 11 months. For past two days has had cough and fever. Will not take food. Examination shows consolidation over the right lower lobe posteriarly. T. 104. P. 128. R. 32. Blood examination shows red blood cells 3,904,000. Hb. 34 per cent., red blood cells show marked variation in size and stain unevenly. White blood cells 24,800. Differential count shows Polymorphonuclears 49.2. Myelocytes .5. Granulars 49.7. Normal 42. Lymphocytes 48.8. Large Mononuclears 1. Transitionals .5. Non-granulars 50.3. Normal 58.

This case shows considerable anaemia and a marked leucocytosis. There is also a relative and absolute increase in the granular cells and a relative decrease in the non-granulars. Myelocytes in this case are interesting and are occasionally met with in the blood of infancy. It seems probable that the cells are being coined so rapidly that a few extraordinary forms are thrown out into the circulating blood.

CASE XXII:—Broncho pneumonia.—M. M., female; 5 years. For past three days has had pain in the abdomen. T. 101.3. P. 148, R. 56. Examination showed slight dullness. Bronchovesicular breathing, few fine moist rales over left lower lobe posteriorly. After three days' observation signs in lungs cleared and bronchitis alone remained. Blood examination showed that the red blood cells stain well, marked variation in size (anisocytosis). Marked leucocytes 25,000. Differential count of 187 white blood cells. Polymorphonuclears 85 per cent. Granulars Normal 66. Large Lymphocytes .6. Small Lymphocytes .2. Non-granular. Normal 34. Large Mononuclears .3. Transitionals .4. Total leucocytes 8,300.

There is even in this very mild pneumonia a marked increase in leucocytes. There is also an absolute and relative increase in the granulars and relative decrease in the non-granulars.

CASE XXIII:—Broncho pneumonia.—T. S., female, 3½ years. For past week has had a cold and cough and some fever. To-day seems worse. T. 101. Examination shows consolidation of the left apex, which cleared up in about 10 days. Blood examination shows red blood cells have moderate variation in size, round and have pale centers. White blood cells 27,400. Differential count. Polymorphonuclears 46. Granulars. Normal 50. Large Lymphocytes 37. Small Lymphocytes 12. Large Mononuclears 2. Transitionals 3. Non-granulars 54. Normal 50.

Here there is a marked leucocytosis. The differential count shows a slight relative decrease in the granulars and a slight relative increase in the non-granulars. This case is, therefore, an exception to the rule in pneumonia and is interesting on that account.

CASE XXIV:—Broncho-pneumonia.—Secondary to Whooping cough. E. O., female, 10 months. For the past three days cough has been different, baby has seemed sick and has had some fever. Examination showed consolidation over the right base posteriorly. Attack was mild, T. never going above 101. In eight days the consolidation cleared and the baby began to whoop again and finished the whooping cough with no further trouble. Blood examination showed that the red blood cells had moderate variation in size, were round in shape and stained rather poorly. Leucocytes 19,400. Differential count. Polymorphonuclears 55.1. Granulars, Normal 38. Large Lymphocytes 23.9. Small Lymphocytes 18.1. Transitionals 2.9. Non-granulars 44.9. Normal 62.

This shows a slight increase in the total number of leucocytes and a relative increase in the granulars and a relative decrease in the non-granulars. This again shows that the pneumonia was able to overcome the lymphocytosis of whooping cough and produce an increase in the granulars.

CASE XXV:—Broncho pneumonia.—Secondary to whooping cough. I. G., female, 17 months. Has had whooping cough for

2 weeks, but has seemed much sicker for the past two days. Examination showed T. 101.3. Consolidation left base. Uneventful recovery. Blood examination showed 41 per cent. Hb. White blood cells 23.00. Differential count. Polymorphonuclears 55.1. Granulars, Normal 43. Large Lymphocytes 23.9. Small Lymphocytes 18.1. Transitionals 2.9. Non-granulars 44.9. Narmal 57.

This shows a marked increase in the total number of leucocytes and a relative increase in the granulars and a relative decrease in the non-granulars. As in the case just preceding the pneumonia was able to overcome the lymphocytosis of whooping cough and produce an increase in the granulars.

CASE XXVI:—Lobar pneumonia.—L. J., male, 15 months. For the past two months has had whooping cough. For the past week has had fever and vomiting. Two days ago spit up blood; yesterday nose bleed and bloody expectoration. T. 104, P. 200, R. 40. Consolidation lower and middle right lobes. Blood examination, white blood cells 30,800. Differential count, polymorphonuclears 59 per cent. Granulars. Normal 57. Large Lymphocytes 36. Small Lymphocytes 2. Transitionals 3. Non-granulars 41. Normal 43.

This blood shows a marked leucocytosis, but the relative proportion of the cells remains about normal.

CASE XXVII:—Lobar pneumonia.—M. M., female, 5½ years. Mother has had six living children and ten miscarriages. Has had measles, pneumonia once before, and whooping cough. For past 24 hours had had pain in stomach and fever. Vomited once. Delirious last night. Examination shows slight cyanosis with grunting expiration. Respirations are rapid. Consolidation left lower lobe with dulness, distant respiration, bronchial voice and breathing; left chest ¾" large than right. Heart apex displaced up and to the right. T. 104, P. 132, R. 52. Some doubt existing on account displacement of heart whether there was not a pleurisy with effusion, a needle was inserted, chest was aspirated, but needle drew off nothing but blood. Blood examination showed leucocytes 29,000. Differential count 516 white blood cells. Polymorphonuclears 86.24. Eosinophiles .19. Granu- blood cells. Polymorphonuclears 86.24. Eosinophiles, 19. Myelocytes 1.36. Granulars 87.79. Normal 70 per cent. Lympsocytes cent.

This shows a marked leucocytosis and a marked increase in the granulars with a marked decrease in the non-granulars. Also the presence of myelocytes, which is not so very uncommon in infants but which becomes more so, the older the child.

CASE XXVIII:—Lobar pneumonia.—Congenital Laryngeal Stenosis. S. S., male, 1 year. This lobar pneumonia developed in a child under observation with congenital laryngeal stenosis. It had always been hoarse since birth and always had more or less "rattle" in its throat. The child looks sick, accessory muscles of respiration brought into play, alae nasi delate. Respirations are rapid Examination shows consolidation over left lower globe with signs of dulness, increased vocal fremitus, bronchial voice and breathing, and medium moist rales. T.104.8 P. 180, R. 62. Blood examination showed leucocytosis 23,000. Differential count gave polymorphonuclears 66.3. Granulars. Normal 42. Lymphocytes 30.2. Large Mononuclears 3.5 Non-granulars 33.7. Normal 58.

This case shows a marked leucocytosis and a marked relative increase in the granulars and a marked relative decrease in the non-granulars.

Flies as Agents in the Dissemination of Koch's Bacillus.—C. Andre, of Lyons, France, found flies to be active agents in dissemination because they are constantly going back and forth between contagious sputa and feces, and foodstuffs, especially meat, fruit, milk, etc., which they pollute by contact with their feet and especially with their excretions. (We have in these columns emphasized this danger; and have space but to present Andre's conclusions.) The sputum and feces of tuberculous subjects must be disinfected; flies should be destroyed as completely as possible; foodstuffs should be protected by means of covers made of wire gauze.

LOBAR PNEUMONIA; ITS ETIOLOGY, PATHOLOGY AND COURSE.

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PART II.

PATHOLOGY.

THE whole of one or more lobes is usually involved in the pneumonic process. The lower lobe of the right lung usually suffers most; next in frequency comes the lower lobe of the left lung, then the right upper lobe, then the left upper lobe. The whole right lung is involved in nine per cent. of the cases; the whole left lung in eight per cent.; both lungs in eight per cent. We differentiate these stages: (a) Congestion or engorgement; (b) Red Hepatization; (c) Gray hepatization or beginning resolution. These stages are not absolutely defined; they may coexist in different parts of the lungs.

During the congestive stage the lung tissue is deep red, edematous and firmer than normal. The capillaries are congested and not as yet occluded. The air vesicles still contain air (for a lung section will float); but the epithelium lining them is swollen, they contain red and white blood cells, serum, fibrin granular matter and proliferation epithelium.

When red hepatization supervenes the involved lobe or lobes become firm, devoid of air and distended with exudate. The involved region then becomes large, the impression of the ribs is made upon it and it may have so increased in size as to press upon the normal lung tissue, or upon the liver below. The lung surface over the area involved shows fibrinous or serofibrinous pleurisy. Blood vessels now become occluded so that necrosis may result; the pulmonary tissue appears on section reddish brown, and of the consisting of liver (whence the term hepatization); it is friable, dry and coarsely granular; when squeezed plugs of exudate project. The bronchi evidence catarrhal or fibrinous inflammation; the bronchioles contain the same inflammatory products as do the alveoli, which latter are densely packed with emigrated mononuclear and polynuclear leucocytes, red blood cells, exuded blood plasma fibrin, exfoliated alveolar epithelium, pneumococci and oftentimes also strepto- and staphylococci.

The lung now passes through an intermediate condition of mottled red and graying to the third stage; about one-half the deaths occur at this time.

When gray hepatization is reached the diseased tissue is grayish white, softer and more friable than in the second stage; the red blood cells lose their coloring matter; the cut surface is moist and covered with a grumous fluid. The exudate degenerates; is either expectorated or absorbed by the lymphatics; there is an "autolytic digestion by proteolytic enzymes; or the product is excreted by the kidneys. This process, which is termed resolution, should begin with defervescence. In "delayed resolution," or "organizing pneumonia," however, the exudate may be albuminous degeneration of heart, liver, kidneys, spleen and other organs. "Pneumococcus empyema," pericarditis, endocarditis, meningitis and croupous colitis are frequently associated conditions; in-

deed, as I have emphasized, lobar pneumonia is a system infection, on which account lesions for which the pneumococcus and its allied bacteria are responsible are to be found in many organs and tissues.

SYMPTOMS.

The incubation period in lobar pneumonia is uncertain. In perhaps one-third of the cases bronchitis may precede the attack; as also chilliness, a little fever, malaise and oppression about the thorax. But the invasion is characteristically abrupt, with severe chills lasting perhaps an hour, sudden rise of temperature (even during the chill), and all the symptoms of a sthenic fever. There may, to begin with, be vomiting. In a few hours intense and sharp pain develops, generally referred to below the nipple, in the lower anterior portion of the chest or in the axilla of the affected side, and increased by inspiration and coughing; this pain may be referred to the abdomen. After three or four days it disappears. The patient lies on the affected side; his cheeks are flushed, especially in the center; he appears sometimes anxious, sometimes apathetic. His dyspnoea (due to pain, toxemia, fever, loss of respiratory function and nervous conditions) is manifest by his dilated nostrils; the respiration is rapid, shallow, jerky, often grunting, and evidencing air starvation; the worse the breathing the more lung tissue there is likely to be involved; the normal ratio of one to four between respiration and pulse is greatly disturbed, being oftentimes one to two. The respirations are thirty to forty in the minute; in children even one hundred.

There is a short, painful cough, dry in the beginning; after the first day appears the characteristic "rusty" or "prune-juice sputum," which is dark-brown, red or orange-yellow, thick and very tenacious, or containing viscid red pellets and perhaps casts of bronchioles. In a few cases the sputum may, however, remain as in bronchitis.

With the development of the disease the pulse becomes full and bounding, from 110 to 116 to the minute; in serious cases it may soon become small and feeble. A pulse over 120 will give us much anxiety; we must then fear sudden or gradual heart failure. Here, as always when we examine the pulse, we must ascertain not only the frequency, but also the rhythm (its possible irregularity and intermittence); its quality (whether it be hard and incompressible, or unduly soft and compressible); and possible dichrotism (which is, however, rare in lobar pneumonia).

The condition of the heart and circulation is important to consider. The heart sounds are loud and clear during the fever; there may be bruits heard; the second sound over the pulmonary artery is accentuated, an indication of the condition of the lesser circulation. With distention of the right chambers and failure of the right ventricle to empty itself completely the pulmonary second round becomes much less distinct (Osler). Dulness to the right of the sternum will indicate an engorged right heart. With gradual heart weakness and signs of dilitation the long pause is greatly shortened, and the sounds approach each other in tone. Sudden early heart collapse will be denoted by a feeble, rapid pulse and increasing cyanosis. Heart weakness may be due to paralysis of the vaso-motor centre with consequent lowering of the general arterial pressure; this is evidenced by the soft, easily-compressible pulse, gray, ashy face, cold hands and feet, clammy perspiration and progressive prostration. Or heart failure may (usually later in the disease) result from the toxic action upon the myocardium, or to the right heart dilitation consequent upon engorgement.

In lobar pneumonia the temperature, after its initial rise, continues high and fairly constant—104 to 105 degrees in the evening and 102 degrees to 103 degrees in the morning. A higher degree is likely when the upper lobes are involved. There is sometimes a very great rise (107 degrees) immediately before the crisis. On the other hand there may be a pseudo-critical period, the temperature dropping several degrees and then rising again. The crisis supervenes generally on the seventh day from the initial chill; and if not then, on the fifth, the eighth, the sixth or the ninth day in the order stated. This crisis is manifested by defervescence or rapid fall in fever; in a few hours (from five to twelve) and usually in the evening there is a fall to normal or below, with profuse sweating in most cases, and with sudden mitigation of distressing symptoms; nevertheless there will as yet be no decided change in the local pulmonary condition. This defervescence may come even on the second day and it may be delayed a month; soon after it resolution is accomplished, but this may be delayed two months. A very rapid defervescence to a decidedly subnormal temperature should occasion concern and even alarm; there may then be profound prostration; epistaxis, hematuria or intestinal hemorrhage may accompany it.

Other symptoms which manifest this serious disease are: Herpes of the lip, nose, genitals or anus. The skin may be hot and dry (a serious condition); or bathed in perspiration from beginning to end. The nervous system may evidence aberrations grading from slight delirium to stupor; the patient may be maniacal, especially in alcoholic cases; headache may be distressing; insomnia may become serious. The tongue is furred and moist; or dry (a serious condition). There is constipation; perhaps also severe meteorism. The urine is an acute fever urine—high colored, of high specific gravity, with albumen, casts and blood; the chlorides are considered to be absent from this excretion in lobar pneumonia.

PHYSICAL SIGNS.

These vary with the three stages. During the first stage (of congestion or engorgement): Inspection demonstrates the movements of the affected side to be more or less restrained with the respiration frequent; the accessory muscles act prominently; the nostrils are dilated. Palpation shows vocal fremitus, slightly increased on the affected side, as also lack of movement; there may be plural fremitus. Percussion shows dulness over the involved lung tissue, slight at first and depending upon the amount of exudate present; sometimes the exudate is so little in amount that we get rather a tympanitic note. Auscultation, if the case is seen before exudation takes place, will show the intensity diminished in the affected part and increased in other portions of the lung; but when there is exudation into the vesicles the crepitant is heard toward the end of inspiration.

This rale, which may be heard best after coughing or after forced inspiration, is very characteristic of the first stage of pneumonia. If the larger bronchi are inflamed we may also get sonorous and sibilant rales. If at about this time there is a pleural fibrinous exudate we may get corresponding friction sounds, with both inspiration and expiration. During the second stage (red hepatization) inspection will show expansion diminished on the affected side and increased on the healthy; palpation will show vocal fremitus increased, but very occasionally diminished. On percussion there is marked dulness over the consolidated lung tissue; if the diseased region is much increased in size, or if the consolidation is very dense and near the surface we may get flatness; there will be increased or hyper-resonance over the healthy part of the affected lung; this relation between hyperresonance and dulness is not affected by the patient's position—an important point. On auscultation, as the air vesicles become completely filled with exudate the crepitant rales cease and bronchial breathing is heard over the solidified lung tissue. The more complete the consolidation the more intensely bronchial or tubular is this respiration. Vocal resonance will show marked bronchophony over the seat of consolidation. The heart sounds are heard with unnatural intensity. Dulness, bronchial breathing and bronchophony assure us of this stage; these characterize consolidation. During the third stage (gray hepatization) we get the same signs of consolidation as in the second. When resolution is taking place percussion shows progressive diminution in dulness; it may be long before normal resonance is restored. On auscultation bronchial gradually gives place to rude (or "broncho-vesicular") respiration; which in turn presently gives place to normal vesicular breathing; simultaneously bronchophony gives place to exaggerated vocal resonance and this in turn to the normal note. As these changes gradually take place subcrepitant and coarse, mucous are added to the crepitant rales; and these remain audible until resolution is complete.

CONVALESCENCE, COMPLICATIONS AND SEQUELAE.

The convalescence from lobar pneumonia is usually rapid. A prolonged temperature, or an unusual rise at or after the crisis must give us reason to fear a relapse, or an invasion of another lobe, or a complication, or a prolonged resolution. Death may come (perhaps quite suddenly) any time after the third day (but most often on the seventh, eighth or ninth day) from cardiac failure, from the extent of the lung tissue involved, from the severe general infection, from a coronary embolus or from a complication.

First among the complications to be feared comes a pleurisy with effusion or an empyema developing on the same side with the pneumonia. The patient will do well until the sixth or seventh day; but defervescence will not be complete. After a few days of temperature rise this complication becomes manifest; we shall generally find pneumococci, strepto- or staphylococci in the pleuritic fiuid.

There may be a general catarrhal bronchitis, especially with the pneumonia of epidemic influenza; much mucus, mixed perhaps with blood, is coughed up; over both lungs we hear sibilant, sonorous and coarse rales; there is troublesome dyspnoea, high temperature and tendency to venous congestion and heart failure.

There may be very serious acute pericarditis—evidenced by precordial pains and friction sounds, rapid and feeble pulse, rapid breathing and cyanosis. The symptoms of this lesion may be more marked than those of the pneumonia; possibly the latter may even be overlooked. This pericarditis is especially likely to complicate left lung pneumonia, the process being by direct local extension.

Endocarditis may have existed before the pneumonia, and this would be very dangerous. Here acute articular rheumatism may also have to be considered. Bad heart action and general venous congestion must then be feared; especially must we consider that a well marked mitral or aortic stenosis may in such cases give no murmur at all. Acute meningitis is an unusual but a fatal complication; we may find great delirium, contractions of groups of muscles, general convulsions, and toward the end stupor and coma. Here the various cocci concerned in pneumonia undoubtedly play a part.

Jaundice will evidence hepatic involvement. Acute degeneration of the kidneys is frequent; it is not particularly dangerous; acute exudative nephritis is much less frequent; it is not of itself fatal, but it may add to the gravity of the pneumonic condition; those who are already sufferers from chronic nephritis (which may previously have given few symptoms) rarely recover from pneumonia; this is one of the terminal pneumonias.

As sequelae of lobar pneumonia we must fear: delayed resolution, which may end in chronic interstitial pneumonia; abscess or gangrene; and such psychic abnormalities as may end even in permanent insanity.

Cuguillere's Anti-Tuberculosis Serum.—E. Cararia (Med. Rec., Sept. 26, 1908), describes this as a vegetable serum which carries colloidal metals already assimilated, that have become organic, living and possessed of their maximum activity; it is a yellow liquid with an odor of garlic, made from organic sulphur taken from the juices of brassica, allium, watercress, horse radish and other herbs, which are antiscorbutic and antirachitic. The formula: Allylum sulphide, 1.0; tr. myrrh, 1.1; Hayem's glycerinated serum, 100. Cararia details experiments on animals by various authors in different countries and men by the use of this serum as a curative treatment in various forms of tuberculosis. Examinations of the organs of cattle cured by this method showed no tubercle bacilli, and demonstrated cure by cicatrization and phagocytosis. This serum acts in advanced cases, where tuberculin is powerless by reason of the powerful reaction it produces; the former increases appetite, facilitates digestion and increases weight. Treatment is easier than with tuberculin. The minimum dose is one to two Cc.; the maximum five to 15 Cc. Cararia reports four cases which he has cured by this means; the serum attacks the cause of the disease—the bacilli themselves; promotes fibrosis, stops hemorrhage, lessens fever, stops diarrhoea and night sweats, helps appetite, strengthens the heart and lessens cough and expectoration.

COLOR-HEARING, WITH TACTILE VALUES OF SOUND.

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SOME people possess the faculty of associating with shapes or sounds some color or shade of color.

If one says "a," it may suggest yellow, or pink. The sight of a written "a" may call up the same color as the sound will do. Or an entirely different association value may be found.

Some elemental feeling for dark or light impressions may exist when a definite tone or tint does not. The person may have a feeling that the character "a" is lighter or brighter than the character "i." In some cases very definite values are discoverable; "a" equalling yellow, "e" equalling red, and so on. The numbers, as printed, have color values: 1 being dark red or black, 2 being sandy yellow, 3 being silver grey, 4 being tin red, or some other equally definite tones of color. Experiments show these interesting features are more commonly present than might be supposed.

What importance, however, may the practitioner attribute to such symptoms? Among hysterical or nervous patients the outbreak of annoying perception of such interrelated sensations may show the unfavorable progress which the case is assuming. Neuropaths, indeed, may possess this faculty of color hearing without any regret or annoyance. It may take a minor part in their conscious existence. Or it may, in persons of sane and substantial physique, take an interesting part in their conscious life and development.

With some nervous cases the favorable progress of affairs has resulted in their losing notice of sound and color association. Later on they may recall the sensations; or some loss of physical or mental tone may elevate the symptom to a prominent place in their thoughts.

A form of hyperesthesia must be responsible for this curious correlation. Besides the suggestion of color, some tactile sensation is aroused. In the best literature we notice an attempt to make words effective in sound as well as in meaning. The leaves of trees are said to "sigh in the wind." In this expression the word "sigh" containing an "s," by its sibilant murmur expresses the arousal and stir in the tree.

Dante's line "E caddi come corpo morte cadde" gives us the dead background of hard "c" and the labial "m" and "p" with no "s" or "sh" value to bring in any element of breathing or movement. The tactile values of words (I say this with full recognition of Berenson's art criticism) will be impossible to escape. To the very sensitive, color audition, or audition coloree, as Europe terms it, will be but a further step and not distant.

Before giving some of the fascinating color series, there are two fallacious or spurious attempts which have come into literature concerning color and sound relationships.

The obvious fact that we have seven tones in the modern diatonic scale, and seven primary colors, led several to try to fit them in pairs. A colored scale was "invented." I use this word because I do not believe any person experiences such a hybrid sensation as a rainbow do, re, mi, fa, sol, la, si (do). And the inventor acknowledged his child, so enough of that.

A second effort to discover color-hearing by force, resulted in awaking a memory of a colored alphabetic chart. The letters had been printed on squares of primary colors, and in this manner the several characters brought up the baby memory of associated color. Neither can this be audition coloree, in a strict sense.

To understand why, one needs realize that it is not the background or substance upon which the letter stands written or printed, nor the tone or quality of voice in which the letter is spoken, which the person feels so suggestive of color. It is the immediate letter, or spoken value of that letter, which suggests the tint and tone. It is not the space in and around the "a" for example, neither is it the line of form of the letter. It is the letter in its individual or distinctive nature, and hence the association is psychic and co-ordinative, and by no means hallucinatory, as some might assert.

Take the word "coal." This suggests four colors in literal succession: milk-white, dead-white, yellow, and clear blue. But the sound of the word suggests these color values in subordination to the grimy black of the noun-subject.

Other color values may be determined for c-o-a-l. I have a record of grey, black, pink and black, in this order. But the person giving the darker series, had less vivid color-hearing than her opponent of the yellow and white series.

Let me give some tables, the result of careful experiment:

Case I.

Character.	Color.	Tactile Value.
a,	——Clear yellow	Soft fluffy
b,	——Dull red	Rounded
c,	——Milky white	Hard, smooth
d,	——Black or brown	Smooth or pointed
e,	——Dull red	Hollow
f,	——Straw green	Dusty
g,	——Muddy green	Smooth
h,	——Light yellow green	Smooth
i,	——Black or deep blue	Round
j,	——Purple	Rough
k,	——Light dull red	Smooth
l,	——Clear blue	Watery
m,	——red	Rounded
n,	——Bright deep red	Metallic
o,	——Dead white	Cloth
p,	——Brown or black	Smooth
q,	——Milky white	Smooth, dull
r,	——"A swirl of deep color"	Uneven
s,	——Pale Naples yellow	Rough
t,	——Brown or black	pointed
u,	——Pale watery blue	Soft
v,	——Yellow	Furrowed
w,	——Grey black	Rough
x,	——Yellow	Rough
y,	——Green, pale yellowish	Watery
z,	——Black	Rough

In this record we see that the yellow letters are a, h, s, v, x and y. These are diverse enough in form to remove any idea of the geometric suggestion of color.

Case II.

Character.	Color.	Tactile Value.
1,	——Black	Smooth
2,	——Pale green	Uneven
3,	——Silver grey	Pointed
4,	——Bright red	Rough

5,——White	Pointed
6,——Brown	Smooth
7,——Blue muddy green	Angular
8,——Bright yellow	Even
9,——Blue green	Rounded
0,——White	Flat

So that, in this series, we see quite a suggestion of tactile values, correlated with the meaning and in advance of the values given in Case I.

The practitioner will say this is too much of psychology for the run of patients. He may feel that his daily rounds are too practical for such nice distinctions and studies. His busy life makes him strictly a "medicine man." No. In the curiously carven spaces of minds such as those who have symptoms of color-hearing, lie secrets which all of us should try to learn. The nervous side of febrile attacks, the deliriums of typhoid, of pneumonia, of meningitis, may be found associated with suggestions whose understanding is connected with the same strange factors one deals with here.

A word, a voice, a shape excites the suffering patient to the highest fear. The nurse fails to realize why or how. The physician may numb the sick mind with hyoscine, or opiates. The acute physician applies rational means and discovers the chain of horrifying sensation, which he unravels. No physician who remembers being ill, can forget his suriously misunderstood sufferings. As the drunken man tries to enunciate and fails to do more than "mush" his vocables, the typhoid patient, with his cerebral disorder, cries and implores the removal of some hateful object in the room, or desires some obnoxious light made dim. But in his fevered condition fails to express himself clearly, so vivid is the suffering and so out of proportion are his feelings. Added to this, a feverish flight of ideas compels him to interpret much extraneous matter. Returning often to the desired subject, only as often to break out upon another topic, the muddle is one only a sympathetic and thoughtful physician, who remembers his psychology, can untangle.

The hysterical patient can be understood when her curious "side chains" of association are found out. She may become ill at the sight of a certain color in a food, if the color is suggestive of the sound of an unpleasant word.

Case III.

Character. Color.	Tactile Value.
"."——Brown or black	Rounded
"'"——Brownish	Smooth
";"——Dark green	Rough
":"——Grey	Hollow
"?"——Silver	tube-like
"!"——Black	Smooth
"*"——Dark greenish silver	Rough

Case IV.

Character. Color.	Tactile Value.
I,——Black	Rounded
II,——Grey or white	evanescent
III,——Silver	Hard
IV,——Red	Smooth
V,—White	Metallic
VI,——Sandy green	Smooth
VII,——Nile green	Hard
VIII,——Yellow	Aairy
IX,——Dark	Multiple
X,——Bright yellow	Smooth
XI,——Black	Rough
XII,——Pink	Smooth

Case V.

Word. Color	Tactile Value.
Plant,——Yellow red	Metallic
Seed,——Nile green	Earthy
Hope,——White	Papery
Slender,——Red	Flat smooth
Tender,——Reddish brown	Ridged
Tell,——Red and Blue	Pointed
Cell,——Milky and red	Thin
Open,——White and red	Hollow

Case VI.

Sound Color.	Tactile Value.
Doh,——Black	Rounded
Ray,——Yellow	Smooth
Mee,——Blue	Pointed
Fah,——Red	Flat
Soh,——Grey, silver	Open
Lah,——Straw green	Soft
See,——Nile green	Rough
Doh,——White	Clear

In this record the doh is movable and the color suggestion follows into any key. The person giving the test means that any keynote is black to the white of its octave and the silver grey of its fifth, the blue of its mediant and the red of its subdominant.

On the other hand, very interesting results obtain from experiments with people having the sense of absolute pitch. To detail these in this paper would be unnecessary.

The color of a laugh is very interesting:

Case VII.

Sound. Color.	Tactile Value.
Ah-hah-hah,——Yellow	Soft
Oh-hoh-hoh,——White or pink	Smooth
Ee-hee-hee,——Nile greenish	Pointed
Oo-hoo-hoo,——Pale blue-green	Smooth

Several very interesting studies of the laugh have appeared. The sort of laugh is characterized by its vowel; the laugh ee-hee-hee is that of spite, or derision. The oh-hoh-hoh laugh is the laugh of superiority. The ah-hah-hah laugh is apt to be good-natured and easy-going.

Now comes the thought of why people have such associations. To say neuropathic or neurotic or hysterical or epileptoid is to classify. But is not explanatory.

Association values may be grouped according to true algebraic formulae. The tension of relationship may be upon two diameters, namely, a+b. We may read 2a+5b, if one goes two units in "a" direction and five units in "b" direction. This gives us an idea of psychologic position.

By assuming any number of possible diameters, one could calculate the exact space of association value. At the same time, in this superspatial form, so arrived at, one could create an abstract symbol of the particular subject, or object.

The diameters would represent avenues of experience. One may have gone seven units in color, so that one adds so much to the experience along another diameter which has been explored twelve units. This gives us a plane of 7a+12b. When a third class of experience is to be correlated we add "c" units.

In this manner, a sort of figure of thought (not figure of speech, although such in designation) will indicate the field of consciousness of the idea as it exists in the person.

With some difference of application, one could construct geometric figures analogous to the various colors and their mixtures.

Let red, orange, yellow, green, blue, indigo, violet be reduced to elements and their complements.

red = + a
green = — a
orange = + b
blue = — b
yellow = + c
violet = — c

(In this, of course, the letters do not represent sources of color hearing, but pure terms in algebra.)

So many parts of red with so many parts of blue would be expressed in terms of +a and —b. This would give a plane figure. If a third color were introduced in the mixture, a third diameter would create a solid figure, for example: 3 parts red, 4 parts blue and 7 parts yellow would stand: 3a—4b+7c.

When we come to explain the curious cross-association values in color-hearing cases, some algebraic method is helpful. It is not possible, in every case, to uncover the diameters whose experience has built up the unusual structure. In an ideal fashion, however, one may assume that they exist.

Every point in such correlated experience remains in the mind to serve as a center for new formulae.

It is important, in making tests for color-hearing values, that the subject be free from disturbing noises or sights. Take the first clear idea suggested, and use only the answers derived from fresh, unwearied moments. Delay in answering may introduce new side associations. This will vitiate the formula, by complicating the number of prime diameters.

Color-hearing, if genuine, is independent of the real color suggested by the sound. For example, the word "grey" may suggest sand yellow, purple and red. The word grey if written in blue ink or in any other color, if genuinely suggestive of yellow, purple and red, will not be influenced by the color of the imprinting. On the other hand, the word grey may involve secondary side associations. A woman by the name of Grey may be a brunette or a blonde. A moment's delay in answering will bring in this secondary value, and vitiate the original or primitive sound-color relationship.

The tactile values of sound are very interesting:

Case VIII.

Sound.	Tactile Value.
Sh,——	Rough, thin.
Tsh,——	Pebbly.
Dsh,——	Rough, solid.
H,——	Movement.
Y,——	Watery.
F,——	Wing-like.
V,——	Creamy.

In this series so many secondary suggestions appear as to construct a complicated formula.

F appears prominently in words like fluff, flutter, fly. It gains its winged or flapping character in this fashion. Would it do so in words not so in meaning? Asking the subject of experiment brings the natural reply that in any word there are letters which are sympathetic to the meaning, letters which are apathetic, and letters of really antagonistic value. The attention of the subject turns upon the sympathetic letters.

In the word "fall," the f is significant of movement and disturbance, the l is more quiet, and attracts the attention if the fall is upon some soft substance. In this fashion the word rain-fall becomes "patter of rain" should one wish the "p" and the "t" values with their more solid and punctate values to assume prominence. The character of the consonants in a word affects us mightily in reinforcement of the significance of any term.

Poets have known this. The Homeric designation of the ocean: polyphloisbos, in the line: "para thina polyphloisboio thalasses" (along the beach of the many sounding sea), here the very rush and tumble of consonants fits the surf of the sea. The study of the color of the Greek letters reveals the significant fact that the characters suggest color even when not understood. In a later paper the foreign letters may be described. It will suffice at this point to say that almost invariably the letters are colorful in that degree in which they suggest some known letter or symbol.

For example, the symbol of "s" in Greek has two forms, as in former English and in modern German, according to position. The Greek "s" at the close of a word resembles our Roman character "s," and follows this in color. The middle word "s" is like our "o" and seems to follow "o" in color, but takes on a harder tactile value.

It is impossible to confust the truth-speaking color-hearer. He does not need to rely upon a facile memory. The geometric figures, or the vocal expression of them truly starts up his color memory centers. These remain virtually inflexible in replies, so that the veri-similitude of sound and color relationship, across what curiously concealed tracts of consciousness spring out, as if in them some strong factor of kinship exists.

All special sense is but the higher evolution, and development of simple protoplasmic irritability. The phases of histologic perception and reaction are simple, and their comprehension in each fine, special sense must be laid bare.

Most interesting of all is the sort of meaning which life offers to the curiously constructed color-hearer. He (or she) goes beyond the average perception of "cool tones," "harsh color" and "soft voices," endowing each sound with a rainbow choice and prismatic splendor.

One more record, Case IX. In this, the sounds are given with their related characteristics of personal quality:

Sound.	Quality.
a,——	Rich, soft, dry.
b,——	Smooth, deceitful.
c,——	Truthful, unsympathetic.
d,——	Square, noble, enduring.
e,——	Open, frank, unclouded.
f,——	Uneven, erect.
g,——	Ignoble, unfair.
h,——	Vacillating.
i,——	Deep, spirited.
j,——	Gorgeous, amicable.
k,——	Common, shallow.
l,——	Pure, elevated.
m,——	Thick, Solid.
n,——	Splendid, resonant.
o,——	Soft, Wool-like.
p,——	Flat, even, dry.
q,——	Thin, flat, transient.
r,——	Rich, noble, glorious.
s,——	Thin, clear, spiritual.
t,——	High, frail, solid.
u,——	Good, pure.
w,——	Frail, structureful.
x,——	Crackling, noble.

y,——Passing, low.
z,—Graphite-like.

And so on. Many more and curious records could be given.

The theory of muscular sense, as in uttering or supposing uttered each sound, explains some of the above. Memories of muscular effort in expressing words containing the several sounds will crop out.

The difference of gutteral utterance from dental and lingual sounds may mean a great deal. The effort of a dental sound is to particularize. The gutteral does not sort out or distinguish, but obscures and withdraws, it may be said. The dental sounds are proper to clear thinking. Gutterals and throaty sounds are less highly specializing. Of course, this is only general in application. The strength of meaning in a word may overbalance all secondary association.

With rather unfamiliar words (the less strongly the meaning obtrudes itself), there is a tendency of secondary associations to come to the front.

Take the word "reticent." There is a word one uses little. So the narrowed sounds of short "e," of sharp sibilant "c" and of the thin "t" express a curious feeling of restriction and closeness. The qualities of the "r" are in the background. On the other hand, if one is acquainted with a stout, jovial person who employs the word reticent, or who is reticent, the antagonism of the "r" and the "n" affects the apathetic "c" and the sympathetic "t" and "i."

A striking set of weight comparisons:

reticent is heavier than compelling.
hope is lighter than fear.
joy is heavier than wish.
appear is lighter than blunder.

A set of touch values compared:

touch is rougher than feel.
ask is softer than touch.
go is flatter than thin or ask.

Such tables may be extended through many curious discoveries of hidden sensations.

The reader may not at first know what influence subconscious interrelations exert upon him. It is not possible, however, to say that they do not influence him.

Mixed Streptococcus and Pneumococcus Orbital Affections.—C. S. Bull (Am. Ophthalmology, Oct., 1908), emphasizes the marked insidiousness of such attacks and the varying duration of the incubation period; the extreme violence of the symptoms in the sudden onset of the attack; the very rapid rise of temperature and the equally sudden fall after operative interference has opened the purulent deposit. The rapid development and violence of the symptoms point apparently to an unfavorable prognosis; immediate and active interference, with free incisions, thorough curetting and irrigation, and prolonged and careful hunting for the purulent foci, soon bring about a more favorable condition. Great vigilance is necessary in watching the cases and in searching for new foci on any sudden and rapid rise in temperature. In Bull's series of cases the patients were all young, the oldest being 21 and the youngest nine months old; in but one case was the eye lost from suppuration.

THE NAUHEIM TREATMENT.*

BY DAVID BOVAIRD, JR., M.D.
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THE title of the paper which I have to present to you this evening is suggestive. The Neuheim baths have so long been in general use in this country that many have come to consider them as embodying the essential features of the Nauheim treatment. They undoubtedly are the most striking and probably the most effective features of the treatment, but they are not by any means all of it, as will be made clear by what I am about to say.

Bad Nauheim is a small village situated in the Duchy of Hesse in the southwestern part of Germany. It lies at an altitude of less than five hundred feet above sea level, in a wide valley which stretches back from the junction of the rivers Rhine and Mainz. It lies on the edge of an ancient volcanic region, known as the Vogelsberg. The village itself is most attractive, with a park of over three hundred acres in its center, a lake of some size in the midst of the park, shady walks in all directions, and behind it, a high hill which gives a glorious view of the surrounding country. The drives about Nauheim are among its most attractive features, the roads running in all directions through most beautiful and fertile farming country, whose fields are bright with poppies and corn flowers, with here and there a village in which the laborers live, or one of the many beautiful forests which add so much to the attractiveness of Germany.

The climate of Nauheim is a not unimportant element in the effectiveness of its cure. The average temperature for the month of June being 63 degrees F., for July 68, August 65. A really hot day such as Americans are familiar with is almost unknown in Nauheim. Rain falls in that climate with remarkable frequency. In fact during the latter part of May and throughout the month of June, rarely a morning passes without some downfall. The rains are never heavy or tempestuous, but gentle drizzles which fall almost imperceptibly. One soon becomes accustomed to them and like the natives pays little or no attention to them. Most frequently after the morning's rain the skies clear, the sun appears and the afternoon is clear and sunshiny, and the evenings beautiful.

The effect of the climate upon American visitors is to produce a distinct feeling of lassitude and relaxation, tending to promote the physical rest which is an important part of the cure.

The town consists of two distinct parts, the old town and the new. The old town being the original German village; the new town which has grown up about the springs being made up almost entirely of the hotels and villas which accommodate the thousands of visitors who every year flock to Neuheim in search of health. The park which lies in the center of the new town has already been spoken of. It is overlooked by the Kurhaus, which is the center, not for the cure, but for the entertainment and diversion of the visitors. Within the park are croquet lawns and tennis courts, and at one edge a golf

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course, so that there is no lack of opportunities for outdoor exercise for those permitted or inclined thereto. The springs from which it derives its valuable waters lie als owithin the park. In other parts of the town are established the inhalatorium for the administration of all manner of inhalation or sprays; a Zander institute, equipped in the most elaborate style; and upon the outskirts of the village, what are known as the graduation houses. To the American visitor these are one of the most unique features of the place.

The graduation houses are great oblong structures of brush, 50 to 100 feet in length, about 10 feet wide, and 25 to 30 feet high. Upon the tops of each are great troughs into which the surplus water from the springs is conducted and from which it is allowed to drip over the brush with consequent evaporation and condensation, resulting in a deposit of some of the mineral ingredients of the water, especially the iron, and the final accumulation in reservoirs at the bottom of the so-called houses, of a condensed or concentrated solution of the more soluble salts in the water. This so-called "mother liquor" is frequently used for the purpose of reinforcing some of the baths; the remainder of it is still further concentrated in an adjacent salt works and the salt extracted for economic purposes.

About each of these graduation houses are constructed walks with seats where many of the patients resort for the purpose of inhaling the vapors rising from the brush, vapors very like sea air, to which are attributed certain curative powers for those suffering from respiratory affections.

A peculiar feature of Nauheim is the variety of medicinal springs found within its limits, providing as they do natural mineral waters strongly charged with carbonic acid suitable both for bathing and drinking purposes. The waters used in bathing are derived from a number of springs, the most notable of which are No. 7, of a depth of 159 metres, whose water has a temperature of 30 degrees C. No. 12, 180 metres deep, with water at a temperature of 34½ degrees C. No. 14, 209 metres deep, with water 32 degrees C. The most popular of the drinking waters are derived from two springs, the Kurbrunnen, 16 metres deep, with water at 20 degrees C., and the Karlsbrunnen, 6 metres deep, with a temperature of 17 degrees C. There are numerous other springs used for both purposes, but the above will suffice to illustrate their general character.

The peculiar properties of the waters derived from these springs may be said to be:

1. Their temperature; the drinking waters having a temperature from 16 to 20 degrees C., the bathing waters from 30 to 35 degrees C.

2. Their high content of carbonic acid gas, varying from 1.8 to as high as 3.9 per cent.

3. Their salts which consist mainly of chlorides, carbonates and phosphates, with a trace of iron, arsenic and various other ingredients.

THE BATHING WATERS.

The waters flowing from several fountains or sprudels are used in several different methods for bathing purposes. If the water is collected in open vats and allowed to stand in the free air it quickly loses most of its carbonic acid and certain of the salts held in solution are deposited or precipitated, giving the water a cloudy, rustlike appearance. The water thus deprived of most of its carbonic oxide and of some of its salts is used in what are known as thermal baths.

If, on the other hand, the water is used exactly as it comes from the fountain, it is spoken of as a sprudel bath.

In other cases the thermal and sprudel waters are mixed in what is called thermal-sprudel baths. Mother liquor or lye.

And again, any of these baths, thermal, sprudel or thermal-sprudel, may be given either in quiet water as in ordinary bathing, or with a constant inflow and outflow of the water in what are termed stream baths.

The rustlike or muddy appearance of the water used in the thermal baths having been noted, it should be said that the waters as they rise from the fountains, or waters freshly gathered from them are beautifully clear and sparkling from their high content of carbonic acid.

The baths are given in bathing establishments, some of them old and many of them new. Each has a waiting room for patients and a long series of bathing rooms with sufficient corps of attendants (men and women) to properly administer the baths.

DRINKING WATERS.

The drinking waters of Nauheim are also essential features of the cure, as they are quite regularly prescribed for the patients undergoing treatment. The taking or drinking of these waters is one of the established features of the life of the town. Every morning at 7 o'clock an orchestra plays at the springs, and the patients gather by the hundreds, each to take his glass or two of one or the other of the springs as prescribed by his physician. They promenade up and down listening to the music and slowly sipping the waters.

That there must be something in the method of giving these waters, as well as in their chemical composition, is clearly shown by the very definite effect derived from the administration of such relatively weak waters as that of the Karlsbrunnen to the amount of only 250 to 500 c.c.

TREATMENT.

The treatment at Nauheim cannot easily be described except in outline, for individualization in treatment is very much emphasized by the physicians of the cure, and there is very little so-called routine about it. We may, however, give something of an idea of the "cure" by describing the general features of a typical case.

The patient rises at half past six or seven o'clock, and as soon as dressed, sallies out to the springs for his morning drink. In taking this in the manner already described he occupies from one-half to one hour; returning to his hotel, he has his breakfast, after which he rests for at least an hour, when he goes to the bathing establishment for his bath. The bath over, he returns, by direction of his physician, immediately to his hotel and goes to bed for another one hour, which usually means that the patient falls

asleep and wakes only for lunch. Lunch over, the afternoon and evening may be spent as the patient wishes, in walking, driving, attending the regular afternoon and evening concerts at the Kurhaus, or in such social diversion as he chooses, so long as it involves no unusual exertion or tax. It will thus be seen that apart from the hours regularly spent in bed during the night, the patient is required to rest a considerable part of the day.

METHOD OF GIVING BATHS.

The baths given in the course of treatment are prescribed for each individual patient as the judgment of his physician determines. They vary in their composition as derived from one spring or another, or by the combination of the waters of two springs; in their temperature for like reasons, and in the time devoted to each bath. They are further modified by being given in what are known as half and full baths. In the half bath, the water rises only to the nipple line as the patient sits in the tub. In the full bath, to the level of his chin, the body being completely covered.

The average cure consists in taking a series of from 25 to 30 baths, given in groups of two or three at a time, with a rest day between each group, and running in succession through the several grades of thermal, thermal-sprudel and sprudel baths, the thermal being regarded as the mildest of the baths, the sprudel as the most effective. All of these baths have been used for many years and their effects noted, as they have been modified in the processes of a cure. We have really very little satisfactory information as to the nature of their action, and the manner of combining them appears to be determined by the experience of the individual physician.

Of the immediate effects of a bath we may make the following statement: The temperature of each bath given is from 90 to 95 degrees F. and produces no appreciable effect upon the body temperature. Similarly the blood pressure is but little affected by any one bath. Certain changes can, however, be quite regularly observed in the patient's pulse; it drops several beats in rate, say from 76 to 70, if previously irregular it becomes more regular; it becomes fuller and appears to have more force.

Those who have read certain publications bearing upon the immediate change in size of the heart affected by these Nauheim baths, have been greatly impressed with the tracings shown indicating an immediate reduction in the size of the heart affected by a single bath. It can safely be said that there is doubt of the accuracy of such statements and that even after a long series of these baths in most cases little or no reduction in the size of the heart can be demonstrated by accurate scientific methods. Apart from these specific effects of the bath, patients regularly find them physically very agreeable, a judgment which the writer can corroborate from personal experience. The effect of the treatment as a whole is to produce, the first week or two, a feeling of very marked lassitude and weakness of which most of the patients keenly complain; but gradually the weakness and lassitude disappear and the patient becomes conscious of a steady improvement, which is usually very satisfactory.

A cure as outlined for the individual case regularly occupies about six weeks; occasionally this is shortened, or in other cases lengthened at the discretion of the physician. Almost without exception at the completion of the Nauheim cure the patient is directed to devote from four to six weeks to a quiet rest in some other resort, sometimes in the mountains in Switzerland, sometimes at more moderate elevation, or again to spend the time in traveling on the sea. But the necessity of this after cure is always insisted upon by the Nauheim physicians. As adjuncts of the cure, as thus outlined, we must speak of, first, the resisted movements or Schott movements, as they are most frequently termed; second, the Zander institute; and third, the so-called Terrain cure. The muscle movements are simple resisted movements of the limbs or body performed under the direction of trained assistants, practised in series calling for gradually increasing effort on the part of the patient. For these muscle movements very beneficial effects in the treatment of cardiac disorders are claimed by some, and just as vigorously denied by others.

The character and use of the Zander apparatus is so well known as to need no further description.

The neighborhood of Nauheim is beautifully adapted for the Terrain cure, the walking of certain definite distances, calling for increased work on the part of the heart day by day, but although the method is no doubt of value in some cases, it at present seems to have but little vogue.

Although the successful treatment of cardiac disorders is the basis of the present widespread fame of Nauheim, we must not forget that the treatment is not by any means limited to that field, but that it is, according to the testimony of the Nauheim physicians, as effective in a wide class of disorders including rheumatism and other organic arthritides, anaemias, nervous affections, etc.

When one sets out to seek an explanation of the effect of the treatment, especially in cardiac disorders, he finds it very difficult, if not practically impossible, to obtain correct or satisfactory information. The virtue of the treatment is commonly assigned to the baths and the undoubted benefit attributed to the chemical composition of the waters, especially their large content of carbonic oxide; but when we seek to learn how or why the addition of common salt and minute traces of various other chemicals to a bath, or the presence in the bath of carbonic oxide gas, should exert any definite influence upon the heart or upon the circulatory system, we find no satisfactory answer. A statement prepared by the associated physicians of Nauheim ascribes the effects of the baths to mechanical stimulation to the skin, with a reflex effect upon the heart, and to the influence of the baths upon the lymph system and the metabolism of the patient. But how these opinions have been reached they do not make clear. In fact, the more the writer saw of the methods of treatment, the more thoroughly he became convinced that while the baths doubtless have a beneficial influence, we cannot at present satisfactorily explain their effects upon the heart and circulation. The great benefit which patients undoubtedly experience must in part at least be attrib-

uted to the climate, the enforced rest involved in the taking of the cure and the life under conditions tending to peace both of mind and body. The remarkable benefit which Nauheim confers upon many sufferers, especially those with cardiac disease of almost any type cannot be questioned in the face of the constantly increasing numbers, who having once experienced the benefits of the treatment, return year by year for its repetition.

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CHRONIC URETHRITIS.*

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CHRONIC urethritis may be defined as a persistent urethral discharge, appearing at the meatus, and lasting more than ten weeks. It generally follows an acute gonorrhoeal process, in which case i tis due to pathological changes of a chronic character, due to the previous acute inflammation, or dependent upon some constitutional idiosyncrasy or traumatism. The discharge as a rule is scanty, milky in color, and viscid, composed of leucocytes, epithelium cells and crystals of phosphates and urates.

Causes.—Under the predisposing causes may be mentioned the gouty and rheumatic diathesis, tuberculosis and syphilis, and the predisposing tendency exhibited by certain people to various catarrhs and inflammations. Intemperance, the improper treatment of the acute stage, the use of too powerful injections, prolonged and ungratified sexual desire, sexual excesses, etc., and most important, the localization of an acute inflammation at some spot causing a stricture or a granular and congested condition of the mucous membrane. Urethral polypi and papillomata are also given as causes, but these conditions are rare. Abscess and fistula, the result of an acute inflammation also cause it, as well as traumatism from horseback and bicycle exercise.

The condition may be divided into three varieties:

1. Where the acute condition subsides somewhat, becoming subacute with occasional exacerbations when the discharge again becomes thick and purulent.

2. Where the discharge becomes thinner until there is nothing evident but a drop or two of mucopurulent fluid in the morning. This is the most frequent form and, as a rule, is accompanied by no discomfort. It may depend upon a simple catarrhal inflammation, congested or granular patches, organic stricture, urethro-prostatic catarrh, follicular prostatitis, tubercular infection, and in cases causes of abscess and of fistula.

3. Where the acute inflammation is apparently entirely recovered from, but after a variable length of time, on account of intemperance or sexual excesses, a thin muco-purulent discharge develops.

The distinctive features of the phases of a chronic urethritis are dependent upon the degree of activity of the inflammation, and so as a rule the degree of contagion is in direct proportion to the purulency of the discharge, but it must be borne in mind that a discharge resulting from a gonorrhoeal infection may after a time lose its purulent character and the power of causing a gonorrhoea in the female. At the same time retaining the power of setting up more or less uterine periuterine, ovarian or tubal inflammation, far reaching and destructive in its results. For that reason, I think we should in every case, where it is at all possible, insist that a man contemplating matrimony should submit to a thorough genito-urinary examination.

There are some cases of gleet which consist of a little sticky moisture at the meatus on rising in the morning, or under sexual excitement; and many of these cases are caused and kept up by the persistency with which the patient will squeeze the urethra to see if the drop or "tear" is there. The condition is due simply to hypersecretion of the mucous follicles, and in many cases where the discharge is more pronounced the cause is a simple catarrhal condition of the mucous membrane with consequent hypersecretion of mucous the result of continued over-stimulation and enlargement of the glands.

The discharge of chronic urethretis arises from the numerous mucous follicles lining the urethra at the spot where the inflammation exists, and of course there is more or less epithelium mixed with it; in fact, that is one of the characteristics of gleet, the rapid formation of epithelium. When we have a urethra with congested or granular patches there is a constant hypersecretion of muco-pus and exfoliated epithelium upon the surface of the lesion and the urine in passing over the affected area rolls up into shreds the exfoliated epithelium and muco-purulent secretion, just as in cases of stricture.

Though these shreds are regarded by many men as indicative of stricture, they frequently occur in cases where no stricture can be determined, and are due entirely to the granular and congested patches. In almost all cases of stricture a chronic inflammation eixsts just behind the seat of the lesion, consequent upon the narrowing of the canal there is a slight pouching or dilatation just behind it, where the urethra has lost some of its elasticity, and where a drop or two of urine will remain and decompose and this decomposition increases the inflammation and consequent secretion, and it is from this spot that the shreds indicative of stricture are derived.

Of all the causes productive of a chronic urethritis, I believe the most frequent is the use of two strong injections during the acute stage, especially when they are given into the hands of the patient and he is allowed to use them himself. Next to that, alcoholic and sexual indulgence before the patient has recovered from his acute attack; and in passing I should like to say a word on the difficulty of making patients realize that fact. With the majority of them, as soon as the discharge has ceased, or they think it has, they can no longer be restrained from intercourse, and then they wonder why their discharge should reappear.

In regard to the duration of chronic urethritis

*Read before the Hospital Graduates Club of Brooklyn, N. Y.

very little can be said as it depends entirely upon the cause and the readiness with which it responds to treatment. Some cases respond very quickly, while others are so persistent, giving histories of treatment at the hands of many practitioners, that one is tempted to pronounce them incurable.

TREATMENT.

In the treatment, the first step to be taken is to thoroughly explore the urethra and determine and locate the cause. This can generally be accomplished by the flexible bulbous bougie or the metallic one, though I consider the flexible the preferable. By its use stricture, congested, granular and sensitive areas can be determined. Also of great value is the endoscope, not only for diagnostic purposes but for treatment as well, and in using the endoscope it is better to use as large a tube as the urethra will admit. In those cases where the cause lies in some constitutional disorder, or the predisposition to catarrh, and where the eaxmination of the urethra fails to reveal any local cause, except a mild catarrhal inflammation, general tonic treatment will usually suffice, such as iron, nux vomica, cod liver oil, etc., sometimes the vegetable astringents, and often small doses of turpentine or cantharides.

Local treatment is not often called for in these cases, but if the catarrhal condition is pronounced, the passage of a full sized sound, which will squeeze out the contents of the dilated follicles, and then the injection of a mild astringent such as zinc sulphate, lead acetate, alum, hydrastis, hemamelis, or the application of a mild solution of iodine or tannic acid and glycerine. The use of astringent ointments is recommended also by some authors. I do not favor their use.

Those cases which are dependent upon the rheumatic diathesis, syphilis or tuberculosis, must, of course, be treated by suitable constitutional remedies. The eixstence of granular and congested patches is easily determined by the bulbous bougie and the endoscope. In withdrawing the bougie slight resistance and some tenderness mark the location of your granular and congested area, and frequently there is a little bloody mucous brought out on the bougie. They should then be examined by means of the endoscope.

The normal urethral mucous membrane appears as a pale pink, while the granular patches are of a bright carmine red, uneven, generally flecked with little dots of grayish adherent mucous and bleeding readily. They require for their cure local applications, though sometimes the passage of a full sized sound every second day is sufficient, acting by squeezing out the pus from the distended follicles and by stimulating the mucous membrane sufficiently to produce absorption of the infiltrated material. Should these means fail direct application must be made to the affected area through the endoscope, and when this is necessary it is most important to locate the exact spot and make your application directly to it, being careful not to touch the surrounding healthy mucous membrane.

The best remedies in these cases are silver nitrate and copper sulphate, and they may be used in varying strength up to thirty grains to the ounce. If the affected area is sufficiently near the meatus, the application may be made through the urethral speculum or metascope.

In some of these cases of granular patches there exists a slight thickening of the mucous membrane underneath. These infiltrated patches are usually found in the pendulous portion, and cases of gleet from this cause defy all treatment until a urethrotomy is performed and the infiltrated thickened tissue divided. The most frequent cause of chronic urethritis, of course, is organic stricture. It is not within the scope of this brief paper to go into the causes, varieties, pathology and treatment of stricture, and I will only say that when stricture exists it must be treated by some one of the many means at our command; gradual dilatation, divulsion, internal or external urethrotomy or electrolysis, all have their advocates and all their advantages. When the stricture occurs at the meatus, there is only one proper way to treat it, that is, by dividing it with the knife. Any attempts at dilatation are useless. That also holds true where we have a meatus too small to admit a full sized instrument.

In many cases of chronic urethritis the inflammation seems to be maintained by a narrow meatus. The operation is extremely simple, but care must be taken to insert the blade of your blunt pointed bistoury well i nand cut down horizontally and in the median line, making your opening a little larger than is necessary in order to allow for the necessary contraction in healing.

When the prostatic urethra is the seat of the inflammation, treatment must be given by the deep urethral syringe, using a solution of nitrate of silver or sulphate of copper, first irrigating the whole canal with a mild antiseptic solution passed into the bladder, then when the patient has passed it out, washing the canal going and coming; make your instillation of silver nitrate, beginning generally with a solution of half a grain to the ounce and increasing half a grain at each treatment which should be given about every four or five days until it reaches as high as ten grains to the ounce. It is rarely necessary to go above that.

In those cases where the prostate or vesicles or both are involved, and they are many, they are treated on the same lines with the addition of a thorough massage which is most important, given with the finger in the rectum, the movements being made from left to right and then vice versa toward the symphysis. This clears out the ducts, helps to decrease the congestion and leads to the absorption of chronic inflammatory material and gives tone to the muscular structure.

I am sorry that time will not permit us to go into more fully the conditions of prostatitis and seminal vesiculitis as they are both interesting and important. The treatment of both conditions, however, is much the same as in the foregoing.

Just a few words more in regard to one other form of treatment for chronic urethritis, that is by soluble astringent and so-called antiseptic bougies. They have their advocates and may have their uses, but I consider them useless and in many cases harmful,

acting as an irritant increasing the inflammation, and much more harmful are they when used in acute cases than in chronic.

132 Montague St., Brooklyn, N. Y.

APPENDICITIS COMPLICATING THE PUERPERIUM.*

BY ALBERT MARTIN JUDD, M.D., BROOKLYN, N. Y.

Adjunct Gynecologist Long Island College Hospital; Gynecologist to the Jewish, Samaritan and Swedish Hospitals; Obstetrician to the Kings County Hospital, etc.

APPENDICITIS complicating pregnancy and the puerperium has been written upon very extensively, but the subject matter of this paper has not received proper attention.

Considered by combining pregnancy and the puerperium we find in the reports many overlapping cases where it would be difficult to find a direct causal relation between the birth of the child and the inflammation of the appendix. That such a causal relation does exist the author is convinced, both from a study of cases reported and from the physiologic and anatomic conditions present at the time. Undoubtedly many cases complicating the puerperium have been overlooked, owing to the peculiar periappendicular condition and the symptom-complex incident to childbirth and the puerperium.

The author wishes to consider only those cases of appendicitis occurring from the period of childbirth up to ten days post partum. All known cases have been reported since 1893, and about one-half of these since 1902. A few cases have been reported where the symptoms began during the parturient act. These the author will not consider as the cause was coincident with pregnancy or parturition and the symptoms overlapped the puerperal state and they should not be counted as among those developing during such state.

Cases developing after the tenth day it is hardly fair to consider in this paper, and in many of these cases there is found at operation such a massing of the vermiform appendix and the right uterine appendages that one cannot say which condition took precedence, the inflammation of the appendix or the salpingitis and ovaritis.

The principal anatomic relations between the internal genitals of the female and the vermiform appendix consist in the displacement and contiguity of these organs during parturition and the puerperium; in the aberrant course of the ovarian vessel beneath the caecum in some instances, and in the continuity of the peritoneum and sub-peritoneal cellular tissues with their anastomosing vascular and lymphatic channels. Such relations undoubtedly invite the extension of an inflammatory condition from one region to the other.

The author has studied twenty-two cases found in the literature as having occurred within the time limit as stated in the paper, together with his own case reported below, and has come to the following conclusions:

If the essential causes of this condition are aroused to activity by circumstances peculiar to parturition or the post partum, very few cases would be recognized clinically during the first twenty-four hours after labor, because it ordinarily requires an interval of several hours for a hidden inflammatory process to cause marked symptoms, and because pain and tenderness over the lower abdomen are common at this time.

On the other hand, these etiologic circumstances would undoubtedly be most prolfic of morbidity within a few days after parturition and rapidly subside in potency as the tissues and organs resumed their usual relations.

In a study of these cases the author finds this to be true, over two-thirds of the cases have developed during the first four days. It is not necessary that the genitals transmit infection to the appendix in order to induce an attack. Parturition may act mechanically by displacement, by direct pressure, or by traction on adhesions. Thus the embarrassment of the circulation, or pressure necrosis, or the tearing of tissues may be a direct etiologic contribution. This would be especially true where the patient had previously suffered from an attack or attacks of appendicitis, because one thing is very clear, micro-organisms of various kinds, under certain circumstances, may become so walled off as to be rendered innocuous and yet retain their vitality within the tissues for many years. This has been demonstrated with absolute certainty. It is no longer a matter of surprise to find that an abscess in bone developing many years after an attack of typhoid fever may yet contain the typhoid bacillus in pure culture. In the same way it seems not unlikely that certain intra-abdominal conditions, after being for the time acute, may become so walled off as to be a source of no immediate danger, and yet the micro-organisms present may retain their vitality and become lightened into activity by such a mechanical process as is labor. The above would be true not only in cases of old appendicitis, but also in cystitis, pyelitis, salpingitis, cholecystitis, liver abscess, in fact, any former abdominal condition. Such considerations are valuable, not only as helping to solve an important problem in etiology, but also because of the indications which they furnish for treatment in cases that are otherwise so hopeless. Whenever there is a history of any previous symptoms of appendicitis and other causative factors of fever following childbirth such as infectious material remaining in the uterus, or where the genital tract does not furnish any evidence of infection having taken place from without, and other intra-abdominal conditions have been carefully excluded; an exploratory operation, where you have right-sided symptoms of the presence of some inflammatory condition in the lower abdomen, is the proper procedure and may save lives that would otherwise be lost.

It has been the custom to group all such cases under the head of infection due to carelessness on the part of the attending physician or nurse. Not a few medical attendants have been brought under suspicion of carelessness in technic when in reality the source of the infectious material was some previously existent microbic condition newly aroused by the disturbance of anatomic relations within the abdomen, and

*Read before the Brooklyn Gynecological Society, May 1, 1908. Re-read, by request, before the Brooklyn Medical Association, January 13th, 1909.

by the increase of physiologic function consequent on nature's effort to absorb as rapidly as possible the superabundant tissues left after labor has been completed.

The signs and symptoms of appendicitis occurring at this time are the same as at other times, but the difficulty is to appreciate their true significance marked as they are by the ordinary post-partum conditions. Pain may be construed as the ordinary after-pains. Tenderness over the lower abdomen is common to the early post-partum and its true importance can only be surmised when well localized.

Rise of temperature may be thought to be sapraemia, but when we have the combination of continued fever with pain and tenderness localized in the right lower abdomen with what may be taught us by the blood findings, and especially with a previous history of probable appendicitis, give your patient the benefit of doubt and operate. When you have a septic infection of the right uterine appendages the early diagnosis of appendicitis may be impossible, but even then the indications are apparent. A method which the author finds assists him in the localization of the pain in these cases is one suggested by Freund, of having the patient turn upon the left side, while examining the region of the appendix.

The history of the author's case is as follows:

M. F., aged 18, birthplace United States, single. Admitted to the author's service in the King's County Hospital, October 27th, 1907. Family and previous history negative. Present illness; Last menses, Feb. 27th; examination Oct. 28th, showed general condition good, patient about eight months pregnant. Position and presentation L. O. A. Pelvic measurements normal. On December 11th, 1907, patient was delivered of a male child, weight seven pounds. Labor normal.

Subsequent History:—Thirty-six hours after delivery patient complained of chilly sensations, headache and abdominal pain located in lower abdomen. Temperature 102, Pulse 120, respiration 24. Face flushed, breath offensive, feet cold, lochia moderate in amount, dull red, no odor. Temperature remained elevated for twelve hours then remained between 97 degrees and 100 for forty-eight hours. Patient during this period complaining of pain in the lower abdomen, colicky in character, diarrhoea, brown watery stools, 15 in forty-eight hours. Nausea and vomiting. On December 15th, 1907, patient complained of a steady pain in the right lower abdomen, localized tenderness over same region; nausea and vomiting; had a chill, temperature rose to 103.8, in two hours; pulse 150, respiration 24. Had a purulent vaginal discharge mixed with scant dark red lochia. Some tenderness over the uterus.

Physical Examination:—Tenderness over the right lower abdomen, not absolutely localized at McBurney's point. Vaginal; superficial area of necrosis on mucous surface of the right labia majora, about the size of a silver dollar. Culture from this surface showed streptococci. Further examination of the vagina showed nothing abnormal with the exception of the tenderness of the uterus above mentioned.

Blood count on December 16th showed leucocytes 22,400; polynuclears 80.5 per cent. The temperature on the 16th fell from its highest point to 99.3 in four hours and remained between 99 and 101 until the time of operation, December 17th, 3.30 P. M.

Operation.—Incision through the right rectus muscle. Appendix removed.

Patholigical Report.—Appendix gangrenous at the tip and on one side. Culture from the appendix showed only bacillus coli communis.

Patient recovered.

For much of the subject matter of this paper the author is indebted to the excellent monograph on the subject read by Dr. David C. Hilton before the Nebraska State Medical Association, May 8, 1907.

375 Grand Avenue.

Three Professions in China.—Medicine, dentistry and the law are now particularly attracting the attention of foreigners in China, according to the observation of Dr. B. M. Perkins, of Shanghai, in the Washington Herald. Dr. Perkins, who has been in the celestial kingdom during ten years, finds that the Chinese people have had all these three professions for ages; but the practice of them has been different from that in other lands, and it will be some time before Chinese competition in any of them will be felt except through foreign training and as a result of the efforts of foreigners. It would seem that Chinese medical men have not been in very good standing among their own people for many years. Native dentists have done more than their medical brethren; and all things considered, Chinese dentistry, while it cannot compare with modern dentistry as practiced in America and Europe, especially in the former, is far above what might have been expected.

Cars and Consumption.—The Interborough Company, it is declared, is taking every precaution to keep its cars in a sanitary condition because of the knowledge its officials have had that unclean cars are often the means of communicating disease. The thick matting which was at one time used is now done away with, its being a catchall for germs being now realized. And this matting is now replaced by hard maple strips three-quarters of an inch square and the same distance apart. The floor of every one of the 2,500 subway and elevated cars is nightly sprinkled with a five per cent. solution of carbolic acid; the floors are then swept clean, after which the settled dust is wiped up carefully with cheesecloth, instead of being churned up with feather dusters. Every week, and if necessary oftener, the floors are scrubbed with a soft soap containing so strong a solution of alkali that it will remove the paint wherever it is allowed to come in contact with it. Every month the interior of each subway car is cleaned with an oil emulsion which gathers up all of the fine particles of dust, and every year at least every car is painted, varnished and oiled. Every night the straps are cleaned with a germicidal solution.

The Open-Air Treatment of Pneumonia is detailed by A. J. Patek, with acknowledgments to Dr. W. P. Northrup (J. A. M. A., Aug. 22, 1908). Access of air to the well protected body is devoid of danger. Puerperal fever, surgical sepsis, typhoid fever, pneumonia, meningitis and other acute inflammatory conditions have also been successfully combated by this means. Even temperature, instead of being desirous, is a menace in the sick room; fresh air currents and changing temperatures are essential. People should cultivate fresh air twenty-three hours in twenty-four. Oxygen is inferior to fresh air in disease. The results of open-air treatment of Pneumonia seem very favorable. The distress signals in this disease are due to the intensity of the pulmonary invasion or to failure of the heart; which conditions are invariably relieved by the cold-weather treatment. Fresh air, unpolluted, unheated, cold if possible, is the purest stimulant and the best prop to a sick, badly functionating lung. Other treatment is eliminated and supportive; the sputum must be destroyed as in tuberculosis.

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COURAGE! THE WORLD DOES MOVE.

WE are all liable to become pessimistic at times, to think that desirable reforms can not be brought about, that false ideas are too firmly rooted to be removed, that, after all, our efforts in practical medicine do not accomplish much.

Think of the tons of paper covered with printer's ink, the cubic kilometers of air used in verbal argument on the simple fact, recognized by every one after the heat of passion was over, that a split in the regular profession of medicine in a highly civilized state was worse than wicked—absurd. Think of the aggravating years spent on that one issue after practically all the members of the profession desired harmony; the knife in the back of the men who came unarmed to Saratoga in 1902, with all confidence that peace had been declared; the loss of a final year because a mere handful of one faction wished to die in the last ditch. The struggle seemed hopeless, but it is over and, with its lesson in mind, other states have avoided the error and the whole profession will be better prepared to resist the temptation to schism that restless agitators are bound to bring before it.

The fact that we do progress has just been forcibly called to mind by an article—written ten or twelve years ago—in which the writer ventured the assertion, as a heresy with scarcely any support, that tuberculosis was not a hereditary disease. To-day it is very generally recognized that while, occasionally, tuberculosis may be transmitted from mother to foetus, and while the child of enfeebled parents has a less degree of resistance toward this disease, there is not the almost hopeless influence of heredity that was formerly conceived and that a good share of what has been called hereditary consumption, is nothing but infection by contact and from fomites.

In many other respects, we have made great progress regarding tuberculosis, one of the most important being that the profession and the intelligent laity have boldly adopted the proposition not only that tuberculosis is curable but that it may be prevented so that, if not actually annihilated, it will cease to be the cause of death for 10 per cent. of all persons in civilized communities. Ten years ago, such a movement would have been impossible. Not only would it have encountered scepticism but it would have been absolutely overwhelmed with ridicule.

And as to the practical results of treatment, we can comfort ourselves not only with the success of surgical and local treatment, prophylaxis and good nursing, but with many little details like myxoedema, chronic colitis, chemic disturbances of the stomach, etc., in which we now have a rational, almost a specific therapy, though, manifestly, not always producing cures.

It sometimes seems that there is a little too much emphasis on hygiene in the modern method of dealing with consumption and analogous, non-surgical forms of tuberculosis. So far as prophylaxis is concerned, most of the men who are considered authority on the subject, preach to us of the "cleanly consumptive" and scout the necessity of anything approaching quarantine. They argue that tuberculosis is not a contagious disease but merely one that is communicable.

Such a distinction of terms is not of much importance. A contagious disease as the term is usually employed is one which does not even require contact for the transplantation of germs. The bacillus tuberculosis requires no extra-corporeal or intermediate corporeal stage in a lower animal to fit it for establishing a new human infection; it requires no special carrier or mode of implantation as does the malarial or yellow fever parasite. The great majority of cases—and, according to Robert Koch whose opinion deserves respect if not agreement—all cases, depend upon previous human infections. The danger of infection from a consumptive applies not so much to the persons who meet him as an individual but to those who follow in his footsteps. We might make a homely comparison to a man walking about a park with an uncontrollable diarrhoea. It is not his companions so much as those who subsequently go over the same places and who are unaware of his existence, who are liable to be contaminated.

All that has been argued about the safety of the "cleanly consumptive," the lack of necessity of segregation, etc., is based implicitly on the claim that spitting is the sole manner of disseminating tubercle bacilli from the air passages and lungs. The fairly fre-

quent occurrence of renal tuberculosis indicates that the urine must be a slight danger, at least. It has also been established that the faeces are almost as regularly infected as the sputum. But, limiting ourselves to the facial openings, the most conscientious use of the sputum cup, leaves the lips contaminated and, by the use of the fingers, it is scarcely possible that the consumptive can fail, in the course of a few days, to convey bacilli to the thirty to fifty dishes, eating utensils, napkins, etc., that he touches at each meal or to the various toilet articles, furniture, etc., in his room or to his personal and bed clothing. However cleanly and careful, one can scarcely avoid sneezing, coughing, blowing the nose, drooling at night. Then, too, we must reckon on the periods and final stage of utter prostration, perhaps delirium or hebetude. How about conscientiousness in such periods? Even quiet breathing has been shown to convey bacilli to Petri dishes in about 3 per cent. of brief experiments.

As to hygienic factors in therapy, we wish merely to suggest first that it is just possible that, in tuberculosis as in other diseases, there is a golden mean between neglect of hygiene and drugging on the one hand, and the entire neglect of medicinal and other special therapeutic measures on the other.

Secondly, hygiene does not consist in being run away with by one or several hobbies. We can overdose with hygienic remedies just as truly and just as disastrously as with medicines. The tuberculosis patient needs ample nourishment, but he can no more stand gross overfeeding than a well man. In particular, he needs fats, but not more than he can absorb nor more than he can assimilate without producing relative acidosis. He needs proteid, perhaps even nucleins or possibly unbound purins, but we are scarcely justified in overloading him with toxic waste products. Again, it is often forgotten, because no special plea has been made for carbohydrates, in tuberculosis, that the consumptive is, after all, an omniverous animal, and that the majority of his heat units should, physiologically, be furnished by starch and sugar.

Secondly, the tuberculous patient needs fresh air, possibly even cold air, but, after all, is it wise to keep a delicate girl out on a verandah in a windy, rainy night, or in a blizzard? Do not the tuberculous need, occasionally, the relaxing effects of warmth and the chance to have a little cutaneous activity as well as that of the lungs and kidneys, in eliminating waste?

A Memorial to Dr. Andrew J. McCosh is expected to be erected at the Presbyterian Hospital in this city to take the form of a building for surgical cases.

VACCINATION AGAINST TYPHOID.

OUR army medical board at Washington has decided to adopt vaccination against typhoid fever; though this may seem an innovation, it is not at all so. In point of fact our military men have here been very conservative; and in this regard our service has been far behind those of other countries. Not until 1908 has any publication of the Surgeon-General referred to immunization against typhoid fever; and this despite the lesson which our unnecessary and dreadful losses in the Spanish war should have taught us. In the recently published report of Surgeon-General O'Reilly we are informed that foreign armies are much interested in the difficulties attending the control of factors concerned in the spread of the disease, and of the foreigners' endeavor to render their soldiers immune to typhoid by means of vaccination. More than ten years ago British medical officers were hard at work upon this problem.

Captain Wright, of the British Medical Corps (now Sir Almroth Wright), invented, about 1898, a promising typhoid vaccine. It was tried first in India, where it was optional with the soldier to take the treatment or not. It was quickly observed that among the vaccinated the number of typhoid cases was precisely one-half of those among the unvaccinated; and the comparative death rate was even more strikingly lowered. As far back as 1903 the Royal College of Physicians of London reported favorably on the inoculations, which (except during eighteen months) have been practiced ever since. The Germans, finding enteric fever a much greater enemy in the campaign against the Herreras in Southwest Africa than the weapons and onslaughts of these people, tried vaccination, with excellent results; the death rate was greatly reduced by the inoculation of killed agar cultures. And French and Italian armies have had much success in this regard.

These inoculations are probably ineffective when the patients have been stricken with the disease; it is in prevention that the greatest hope of their efficacy lies.

The method of preparing and using the vaccine is relatively simple. Colonies of typhoid abcilli from which all other germs are carefully excluded, are grown; these highly virulent mixtures are then killed by heat, standardized as to strength, preserved with a small quantity of antiseptic and then put away until needed. Vaccination is by the hypodermatic needle; two doses are usually given, at an interval of several days—the first dose of several hundred million dead typhoid bacilli, the second of about twice as many as the first. The recipient suffers no more from this vaccination than he would in receiv-

ing smallpox vaccine; their is slight redness and swelling at the point of inoculation, with some fever, which however rapidly subsides. The second injection greatly increases the degree of protection; nor do unfavorable developments seem to obtain.

It is not certain how long such inoculations are protective against typhoid; the best workers believe the immunization lasts six years. Nor is there a guarantee of absolute immunity. Dr. E. O. Jordan, of the University of Chicago, in his work on General Bacteriology, holds that protective inoculation is desirable even among civilians and in peace times, whenever hospital attendants have to deal with numbers of typhoid cases. It is hoped, too, that in serious epidemics generally such vaccination may become an important means of staying the spread of typhoid fever. For example, many lives might by this means have been saved in Philadelphia during the recent typhoid epidemics from bad drinking water. Missionary associations are now recommending its volunteers to tropical regions where enteric fever is endemic, to subject themselves to inoculation before their departure.

Among the army medical board as now constituted (the board which took the decision here referred to) but one member is in the regular medical service—General O'Reilly. The others are Dr. V. C. Vaughan, Prof. W. T. Councilman, Dr. Simon Flexner, Prof. W. S. Thayer, Dr. John H. Musser and Dr. Alexander Lambert. All these physicians with others equally distinguished have recently affiliated themselves with the army as first lieutenants of the new Medical Reserve Corps. Under the law reorganizing the medical department of the army, physicians and surgeons thus appointed may be called into active service at any time of need, either to serve on boards or as professional adjuncts. Both the army and science should profit enormously by this arrangement. It has been justly observed that while there are many valuable and progressive medical officers in the army the extreme conservatism of the department heads has too often kept them in the background and has driven such men as Major Reed and Dr. Gorgas to find fame and reward in what is not really military medical practice. Perhaps the new Surgeon-General, Col. Geo. H. Torney, will be able to inoculate his service with "a virus of radical progressiveness."

Primary Carcinoma of the Bronchus.—Letulle (Journal des Praticiens, Jan. 2, 1909), reports three cases. Primary cancer of the bronchial structure may assume one of three varieties: 1, interstitial; 2, vegetating; 3, cavernous. From a clinical standpoint the disease is protean.

MEDICAL EXPERTS.

THE odium connected with the present custom of hiring interested and partial expert testimony has attracted too much unfavorable comment among our own profession and the laity, to require discussion. We are glad to note that the New York (State) Bar Association, as the result of the agitation on the subject, has taken definite and well considered action to remedy the present abuses.

A committee of this association has drafted the following bill which, we understand, will be presented to the present legislature and, having already been endorsed by this representative organization, will probably be passed without significant amendment.

Section I—Within 90 days after this act shall take effect, the justices of the Supreme Court assigned to the Appellate Divisions thereof, in the several departments, shall designate at least ten and not more than 60 physicians in each judicial district, who may be called as medical expert witnesses by the trial court or by any party to a civil or criminal action, in any of the courts of this state, and who, when so called, shall testify and be subject to full examination and cross-examination as other witnesses are.

Section II—When so directed by the trial court, witnesses so called, shall receive for their services and attendance, such sums as the presiding judge may allow, to be at once paid by the treasurer or other fiscal officer of the county in which the trial is had.

Section III—This act shall not be construed as limiting the right of parties to call other expert witnesses as heretofore.

Section IV—This act shall take effect September 1st, 1909.

It is obvious that neither this nor any other bill can do away with the danger of partiality either in the selection of experts or in the presentation of their testimony or in the attempt to give it a partisan bias, or in regard to the fairness, in either direction, of fees. It would be well to provide more definitely for the establishment of qualifications by the applicants for rating as experts, and to state in so many words the obvious fact that an expert should be appointed as an expert in some definite branch. Perhaps it would be wise also to guard against the danger of appointing experts merely on account of social or very general professional standing instead of actual attainments. Nor can we be unmindful of the instances in which extravagant fees have been allowed or of the opposite instances in which judges have held very narrow views as to the value of accomplishments in another profession than their own.

Still, the general high character and ability of the judiciary and the rather liberal allowance of experts

for each district should prevent more than an occasional isolated instance of injustice while the bill explicitly provides for the employment of other experts.

It should also be remembered that, in any case, the mere attempt to secure a reform by legal measures is an entering wedge of great importance, however imperfect the remedy explicitly formulated. When the people, through legislative measures, have recorded themselves as desiring a certain end, and the measures adopted fail to produce the requisite effect, correction of the imperfect instrument follows as a matter of course and, usually, in a comparatively short time.

KISSING THE BOOK.

ANYONE who has had the unfortunate occasion to appear as a witness in court proceedings must learn with grateful emotions of the precedent recently established by Sir Gorell Barnes, an English judge, who permits witnesses to take the Scotch oath, which does not require the "kissing of the book." Both he and the witness standing, the latter repeats the following: "I swear by Almighty God that I will speak the truth, the whole truth and nothing but the truth." Here were indeed an innovation devoutly to be wished in all courts where the Bible which is expected to be kissed has its covers as filthy as any bank note, however much circulated. The process is not only dangerous but decidedly repulsive as well. The wise (and humane) judge here instanced has also provided for all those who feel their consciences will not be sufficiently fortified unless they do "kiss the book," that copies of the Testament be especially bound so that they may be frequently cleansed after such contact. It is however the general rule of English law (which we so largely follow in our courts) that all witnesses may be sworn according to the ceremonies peculiar to their own religion or in such manner as they deem binding on their consciences.

An interesting curiosity in oaths is the following taken by the High Court Judges in the Isle of Man: "By this Book and the contents thereof and by the wonderful works that God hath miraculously wrought in the heaven above and the earth beneath in six days and six nights, I do swear that I will, without respect of favour or friendship, loss or gain, consanguinity or affinity, envy or malice. execute the laws of this Isle justly between party and party as indifferently as the herring backbone doth lie in the midst of the fish. So help me, God, and the contents of this Book." Who would dare perjure himself after such an oath!

In court experience, especially in the minor courts, the swearing of oaths by witnesses is continually in likelihood of becoming perfunctory and to become bereft of the impressive character which should obtain, as for example, in Pickwick Papers: "All this time the man in the spectacles was hard at work, swearing the clerks, the oath being invariably administered without any effort at punctuation and usually in the following terms: 'Take the book in your right hand this is your name and handwriting you swear that the contents of this your affidavit are true so help you God a shilling you must get change I haven't got it.'" How many an asseverator would feel his statements to be binding merely by the going through of such a formula as this!

After all why need a witness do more than affirm that he will speak the truth. The word of an honest man needs no oath; and all others will seek to evade its terms, and all the more under the tutelage of ingenious lawyers, such as are not particularly rare birds nowadays.

THE HEALTH OF NEW YORK.

THE vital statistics report of the Metropolitan Department of Health for the year 1908 shows some interesting and gratifying changes. The city's death rate for the last five years has been steadily decreasing, whilst the birth-rate has increased. A gruesome aside is that the number of suicides have also increased. Our death rate in 1908 was 16.52 per 1,000—the lowest in the city's history and one of the lowest municipal records in the world. Deaths from typhoid, malarial fever, smallpox, pertussis, diphtheria and croup, pulmonary tuberculosis, spinal meningitis, apoplexy, acute bronchitis and the pneumonias have been below the average for the last semi-decade. Accidents have also markedly decreased. But the Health Department takes much pride (to which it is richly entitled) in the mortality decrease among children under five years of age; this is explained on the ground of better municipal sanitary conditions and the spread of education in hygiene among our large alien population. There was also a decrease in the deaths of persons 65 years old and over. Three diseases, however, shown an increased death rate—measles, scarlet fever and cancer.

Commissioner Darlington holds (and surely with justice) that to the advance of science is largely due the very satisfactory conditions here set forth; a more accurate specification of diseases and a fuller and more exact knowledge of their treatment have also contributed toward bringing about such results.

Tuberculosis is steadily losing ground in the num-

ber of its victims; this is largely by reason of an increased sanitation, personal cleanliness, more wholesome eating habits and better housing; such knowledge of disease prevention as the late exhibit has been the means of disseminating tends unquestionably to bring down the death rate from consumption, but from many other non-congenital diseases as well. The educational value, indeed, of such exhibits as that recently held in the American Museum of Natural History can hardly be overestimated. It was attended by a surprisingly large number of recent immigrants. This educational work was occasional, but the Health Department is unremitting in its work of reaching our foreign accretions of population by means of circulars and handbooks in their languages; nor are their children being neglected in this instruction.

It has indeed been well observed that there is no inherent reason why urban mortality should exceed that of the country. The cities of Austria and of Bavaria have in fact for years been more healthful than the rural districts of those countries; and among no urban health conditions are fast approximating in excellence those of our rural districts.

Midwinter Medical Meetings.—We are glad to note that the New York State Journal of Medicine, the official organ of the State Society, has questioned the wisdom of continuing the January meeting of the Society. The increase in membership of this society, due not so much to the amalgamation of the old Society and the Association, as to the adoption of the policy of the latter body of making every member of a county society, ipso facto, a member of the State organization, has been from about 600 to over 6,000. The attendance, however, has increased only a trifle and, in 1908, was 447. About 7 per cent. of the members were, therefore in attendance, as compared with 20 per cent. for the Chicago meeting of the A. M. A. As the Journal says, the various attractions of the national meeting, outweigh the far greater expense and consumption of time for travel, yet New York has the lowest percentage attendance of any State society.

To some extent the State society is still influenced bv its precedent of making this body a sort of senate of the profession, with a limited membership, acquired after serving as a delegate and with a rather small number of vacancies for delegates from each country. We may say in passing, that in our personal opinion, this method has certain advantages, among others that the reasonable delay and difficulty in securing membership in the State body, guaranteed a degree of maturity to its proceedings and a relatively large attendance and active interest on the part of members. Moreover, we question whether the average member of a county society considers his de facto membership in the State body a quid pro quo for the material increase in dues. However, we have not opposed the change to a more popular representation of the profession.

All of the large cities of the State are on the direct railroad lines to Albany and, altogether, approximately six of the 8½ millions of the population of the State can reach this city easily. But, while the distances of travel within the State are not over 400 miles from the capital, the railroad connections are inconvenient and the time of travel disproportionate to the distance, for fully a quarter of the population. Even inhabitants of small towns on the direct route of travel must take a local train and wait for an express at the nearest stop.

The Journal remarks upon the inadequacy of hotel accommodations in Albany, especially during the session of the legislature and we may add that, relatively to the accommodation given, the rates are about 30 per cent. higher than for most cities outside of New York.

Many years ago, we called attention to the undesirability of winter medical conventions. The exposure incident to travel and absence from home comforts, is a serious item for the older members of the profession and the hardship of travel in the winter undoubtedly deters many country practitioners from attending. A large factor in the popularity of the meetings of the A. M. A. is the possibility of combining work with recreation. The time limit of reduced railroad transportation for the Albany meeting in itself precludes the idea of a vacation and, with due respect, there is comparatively little either to amuse or instruct the visitor to Albany in the winter.

A far more serious obstacle to numeric success of the annual meeting of the Medical Society of the State of New York, is that it occurs just when the demands of practice are most insistent. Many have been obliged to miss meetings on this account and have regretted not attending others, and it may be said that comparatively few of the profession are so favorably situated with regard to lack of emergent cases. For the general practitioner, especially in the country, attendance is absolutely out of the question, unless circumstances are unusual.

All this is intended, not as an apology for the small attendance at the Albany meetings but as an appeal to the profession of the State to demand a change so that the meetings may be brought within the reach of the men who need the benefit of association with their fellows and, who, in turn, are equally necessary for the benefit of those who manage to attend under present circumstances. It may be advisable to continue the meeting of the House of Delegates during the session of the legislature and sufficiently early in the winter to advise the legislature with regard to impending medical and sanitary legislation, but the scientific, not to mention the possible social interests of the New York profession, require a change of date, and possibly of meeting place:

The Foot and Mouth Disease.—C. D. Smead, V.S., has contributed to the New York Tribune a valuable paper. There is no possible danger of this disease ever extending over any great area in this country, as practically every State in the Union has now a fairly well organized department of agriculture,

which would check its first appearance. Cattle owners need not grow hysterical over it; nor need city folk fear early graves by reason of eating and drink flesh and milk. Never will foot and mouth disease ever cause in this country such losses as England and Europe have in years past sustained; our farmers are now alert to seek veterinary and State aid upon the slightest occasion, so that disease will be localized and prevented from spreading to any great degree. It is not yet definitely known the nature of the virus; or precisely under what conditions it may develop. The disease may be brought to this country in foreign hides. While it has been known for over two centuries in Holland and other Continental countries, it was as late as 1839 before Great Britain suffered severely from this "cattle plague." All of the cloven footed animals are more susceptible than the horse or several toe-footed animals; this is no doubt by reason of the germ or virus being conveyed by moist soil or filth containing it, up between the sections of the bifurcated foot to the skin just above the foot, which is the point of inoculation when it is moist or perhaps a little sore or tender. An itching pustule is soon formed; the animal licks this to get relief, so that blisters and pustules soon develop in and about the mouth. There then arises temperature; no solid food can be taken, wherefore unless fluid nourishment is provided it the animal is likely to starve to death before the disease has run its course—from ten to fifteen days. A surviving animal is practically immune to future attacks. In very bad cases the hoofs may drop off. The milk of all cows suffering from this disease is of course unfit for use, either for human beings or for calves; nor should the flesh be eaten. Yet it is doubtful if such procedures are extremely dangerous. The chief source of human infection is direct inoculation through sores or abrasions, especially on the hands. Among animals it is not a very fatal disease; the chief loss among dairy-herds being of the hoofs of other animals; worst of all, the soil where the animals run becomes inoculated to the degree that it becomes a source of continual danger. All cattle, sheep, swine and other live stock owners should aid our federal government (which has been very alert and generous in these premises) in stamping out the disease, by disinfection and appropriate quarantine, so that it shall not get a sure or permanent foothold in this country. The infective agency can be conveyed to man in boots, or by dogs, cats and fowl. A week's time properly employed should suffice to stamp out any outbreak upon one's property.

Dr. Deaver Honored.—On February 15th last one hundred and sixty surgeons, each possessing a scar as evidence of the removal of his appendix, were hosts of Dr. John B. Deaver, of Philadelphia, who had operated upon them all. He was the only possessor of an appendix among the diners. Even the waiters were bereft of this rudiment, though Dr. Deaver was not alone responsible for their bereavement. They were garbed for this occasion as Red Cross orderlies. A loving cup was presented Dr. Deaver in the form of a manikin, with a knife sticking in the abdomen at the point of the appendicitis incision. The table decorations were symbolic.

BIBLIOGRAPHICAL

American Practice of Surgery. A complete system of the Science and Art of Surgery by representative Surgeons of the United States and Canada. Edited by Joseph D. Bryant, M.D., LL.D., and Albert H. Buck, M.D., of New York City. Complete in eight volumes. Profusely illustrated. Volume five. Octavo pp. 965.

The present volume of this great work contains Surgery of the Head; of the Cranial Nerves; of the Face; Harelip and Cleft Palate; Surgery of the Eye; of the Ear; of the Pharynx, Larynx and Trachea; of the Nasal Cavities and Accessory Sinuses; of the Jaws; Prosthesis in Relation to Oral Surgery, and Surgery of the Mouth and Tongue.

Dr. Archibald's article on surgical affections and wounds of the head is most elaborate and profusely illustrated, covering three hundred and seventy-eight pages.

The other contributions are of a high order and suited to a work of this character.

Too much cannot be said in praise of this excellent undertaking, both in respect to the contributors and to the publishers.

Five of the eight large volumes are already in hand, and the other three, to complete the set, will be soon issued.

The text gives a portrayal of surgery as it is practiced at present in this country and in Canada, and is written by surgeons eminent in the particular lines in which they have been asked to contribute by the editors, and the selection has not been confined within narrow boundaries.

This composite work presents a picture which could only be obtained by the means employed, and is true to life.

No surgeon will fail to posses the work, and the general practitioner will find it a great accession to his library.

A Mind That Found Itself An Autobiography. By Clifford Whittingham Beers. Octavo pp. 303. Price $1.50. New York and London: Longmans, Green & Co.

This story, so strange as to challenge belief, has been presented in a way especially calculated to inspire confidence.

Matter which has enlisted the support of so eminent a psychologist as Professor James, of Harvard, is certainly entitled to a respectful hearing.

Prof. James says in the preface that this book ought to go far toward helping along that terribly needed reform, the amelioration of the lot of the insane. The subject is handled with great skill, and will be found of interest to scientist and layman.

The text reads like fiction, but it is not.

The author proposes an Auxiliary Society in behalf of the insane, upon the same lines as "The Society for the Promotion of the Welfare of the Insane," which existed in this city many years since, and which we presume is defunct from inanition. The subject does not appeal to the majority, notwithstanding its great importance. This volume ought to furnish a new impulse.

Clinical Diagnosis and Treatment of Disorders of the Bladder, with Technique of Cystoscopy. By Follen Cabot, M.D. Professor Genitourinary Diseases, Post-Graduate Medical School; Attending Genito-urinary Surgeon, Post-Graduate and City Hospitals, New York. 8vo, 225 pp. 41 illustrations, 1 colored plate. Prepaid $2.00. New York: E. B. Treat & Co. 1909.

This book has been written for the guidance of the general practitioner, the chief aim of the author being to give practical methods for the diagnosis and treatment of disorders of the urinary bladder. After considerable experience with both the medical and surgical sides of the subject, the need of such a book has become apparent.

Many practitioners in the past have felt that the technique of cystoscopy was beyond their reach, but the recent improvements and reduction in cost of the instruments for this purpose have brought it within the reach of all, thus enabling them to accurately diagnose and successfully treat various hitherto obscure disorders of the bladder and kidneys.

While cystoscopy has justly been accorded an important position as a means of diagnosis and also in the treatment of many disorders, all useful methods have been discussed.

Bacterial Food Poisoning. A Concise Exposition of the Etiology, Bacteriology, Pathology, Symptomatology, Prophylaxis, and Treatment of So-Called Ptomaine Poisoning. By Prof. Dr. A. Dieudonne, Munich. Authorized translation, edited, with additions, by Dr. Charles Frederick Bolduan, Bacteriologist, Research Laboratory, Department of Health, City of New York. 8vo, 128 pp. Cloth. Prepaid, $1.00 net. New York: E. B. Treat & Co. 1909.

Published less than a year ago, Prof. Dieudonne's manual on "Bacterial Food Poisoning" has already become favorably known as one of the best presentations of the subject. In the present translation, the editor has incorporated descriptions of a number of recent outbreaks of food poisoning, elaborating upon the prophylaxis applicable to American conditions, and also going more fully into detail on the subject of treatment. He has slightly rearranged the material so that paragraph headings could be inserted and the subject of all chapters discussed in the same sequence. An index has also been added to facilitate reference, and this, with the other changes and additions, greatly enhances the value of the volume.

Practical Dietetics with Reference to Diet in Disease. By Alida Frances Pattee. Graduate, Boston Normal School of Household Arts. Late Instructor in Dietetics, Bellevue Training School for Nurses, Bellevue Hospital, New York City. Special Lecturer at Bellevue, Mount Sinai, Hahnemann and the Flower Hospital Training Schools for Nurses, New York City; St. Vincent de Paul Hospital, Brockville, Ontario, Canada. Fifth edition. 12mo. Cloth. 300 pp. Price, $1.00 net. Mt. Vernon, N. Y.: A. F. Pattee, Publisher.

The annual edition of ten thousand copies shows the great demand for this useful and popular book. It has been adopted as a text book, practically everywhere. Our readers need not hesitate to send for it if such a work is required.

Seven Hundred Surgical Suggestions. Practical Brevities in Surgical Diagnosis and Treatment. By Walter M. Brickner, B.S., M.D., Assistant Adjunct Surgeon, Mount Sinai Hospital, New York; Editor-in-Chief, American Journal of Surgery, Eli Moschcowitz, A.B., M.D., Assistant Physician, Mount Sinai Hospital Dispensary, New York, and Harold M. Hays, M.A., M.D. Third Series. Duedecimo; 153 pages. New York: Surgery Publishing Co., 92 William St. Price, semi-de-lux, $1.00; full library de lux, ooze leather, gold edges, $2.25.

This volume is literally "packed full" of useful and valuable information for the general practitioner or surgeon. Written in short, terse epigramatic paragraphs it puts its hints to the reader in a manner which makes a lasting impression. In its present and enlarged form it is a gem in all respects.

Any work which would call for three editions in two years, each larger and better than the previous one, is an indication of its usefulness and popularity and Seven Hundred Surgical Suggestions surpasses them all. The originality of its contents is in keeping with its elaborate and attractive mechanical make-up, and every practitioner should have a copy.

Confessions of a Neurasthenic. By William Taylor Marrs, M.D. Illustrated with original drawings. 12mo. pp. 115. Extra cloth. Price, $1.00 net. Philadelphia, Pa.: F. A. Davis Company.

This is a graphic and entertaining, as well as instructive account of the ups and downs, with the incidental variations in the career of one of those numerous individuals whose complex and highly developed nervous organization has sounded the depths and scaled the heights of untold pain and pleasure, pathos and humor.

Tabes Dorsalis, states Williams (Am. Jour. Med. Sci., Aug., 1908), is a secondary degeneration in the posterior columns, due to a chronic meningitis, probably of syphilitic origin; the arrangement of the meninges surrounding the nerve root renders it particularly liable at that point to mechanical or toxic injury; the unequal incidence on different fibres of the posterior root is probably due to unascertained peculiarity of structure or arrangement of fasciculi, rather than to any selective toxic influence; the lesions tend toward resolution and arrest; with this arrest, regeneration tends to occur in the nerve roots, the amount in the anterior nerve-root being considerable, whilst that in the posterior root is less in amount and functionally insignificant. This difference is shown to have a basis in anatomic fact. The trophic center of the anterior root is the pyramidal cells in the anterior horn. Upon the absorption of the meningeal exudate the cells push out new fibres, which make their way along the old paths to the muscles. In the posterior root, on the other hand, the portion of the fibre distal from its trophic centre, the posterior root ganglion, loses its neurilemma on entering the cord. This absence of neurilemma prevents the regeneration of the fibre, when the trophic centre has recovered function. The regenerating fibres stop at the point of reflection of the pia mater at Obersteiner's ring. The otherwise unexplained vaso-motor and cranial nerve symptoms are necessary concomitants of the tabetic process.

CORRESPONDENCE

SOME PERTINENT QUESTIONS AS TO CAUSES AND EFFECTS.

To the Editor of the MEDICAL TIMES:

I am aware that this letter, wherein my Yankee heredity predominates, may call forth a rejoinder like that given by a father to his son when he asked what God was doing in the ages before He created the world? "Cutting switches to whip inquisitive children with." Nevertheless, I shall proceed to ask questions of those who profess to know, and whose duty it is to make plain a seeming mystery to a less favored professional brother. This is a right we possess and should exercise. The assigned causes of, like the cures for, pulmonary tuberculosis, are too numerous to mention, and this is undeniable proof that at the present time both are unknown factors. The mycologist will tell you that a microbe whose longitudinal dimension is about 1-4,000 of an inch, is the sole cause of all forms of tuberculous disease. As we are also told that it enters the circulation chiefly by inhalation, the questions are suggested, why do they not always begin their vicious work in the lungs, and not, as frequently happens, proceed to some distant joint, usually the hip, or to the bowels. How do they reach the unborn babe?

Why do rabbits confined in a damp, dark cellar die with this disease, while others of the same lot to whom iron was given, escape? In the tuberculous joint, amputation, excision or extension as a rule results in complete restoration. Is this because the microbes congregate in one spot like a swarm of bees, and their existence depends upon osseous attrition? I think that the pulmonary microbe will be found to resemble that producing cholera. You ask a mycologist why there are some localities where a case of cholera never originated, while in others they died like rotten sheep, and although this question may make them feel like using one of the switches divinely cut for inquisitive children, they will answer: "The cholera germ has not been discovered; there may be some other cause for the disease." Understand, I do not deny the presence of microbes, differing with the various diseases, but claim that their presence is merely an effect, but not the cause. However, I may be like the colored student when he asked the negro superintendent: "Fessor, when de tide comes in dars mo water in all de oceans dan when de tide goes out. Now, when de tide goes out what comes of all de water in de oceans?" "Um, ah, O. E., well honey, dat's a question dat can only be answered in Latin: "Humptus, dumptus, dixus digitus, riproarabus. Now dars whar all de water goes, but chile you'se not educated to de point whar you can understand dis kind of language." There is too much humptus dumptus about many of these answers; there are too many physiological prevaricators.

The claim that pulmonary tuberculosis originates from the consumption of milk, taken from tuberculous cows, is a city conceived fancy; as a rule milk drinkers are not tuberculous. A cow to be profitable to the dairyman must give a test not less than four per cent. of fat, with a large flow of milk; all others are eliminated from the herd. A tuberculous cow cannot meet these requirements. The Indians of Alaska as well as the Esquimaux, as a rule die with consumption before they attain the age of forty, and if milk is the cause it should not take forty years to kill them; but where do they get the milk? Is it from the deer, musk-ox, walrus or polar bear? Dr. Kingsbury reports that the Alaska Indians, during the summer months, live principally on fresh fish, and decayed ones in the winter, which they take from a pile packed away for this purpose during the summer. Dr. Knight, of Sheffield, Eng., said that fork-grinders, using dry stones, die with consumption at an average age of 32. Razor grinders using wet and dry stones average 35. Knife grinders using wet stones average 47. From this it would appear that a shower of stone and steel dust affords an entrance for the pulmonary microbe. Possibly grindstones are largely composed of the microbes and this is one of the points of origin. At all events there is no denying the fact that this combination of pulverized sandstone and steel will destroy the best pair of lungs in the world, microbe or no microbe. Dr. Wilson Fox (Brit. Med. Jour., May 23-30, and June 6, 1868), found that non-tuberculous substances introduced under the skin of guinea pigs and rabbits were followed by the production of a disease he considered tuberculous. Dr. Andrew Clark found that he could succeed in producing pulmonary tuberculosis by inoculating animals with non-tuberculous morbid products. Dr. Sanderson (Brit. Med. Jour., April 18, 1868), found by numerous experiments that morbid changes in internal organs, of the same nature as those resulting from the innoculation of tubercle, could be produced by any irritation of the requisite degree of intensity applied to the subcutaneous tissue. Holmes expressed his belief that tuberculosis is often the effect of a traumatic cause. Dr. Lewis A. Sayre made the same statement. Profs. Gross and Bryant, of Guys Hospital, concurred in the above statements. The history of almost every case of hip joint disease will trace the trouble to some injury received prior to its development; such, at least, has been my experience, and such an origin makes the theory tenable that a pulmonary irritation, of itself non-tuberculous, may become the nidus for its development, when the conditions favor such growth; for the symptoms of tuberculosis are the symptoms of debility. In my opinion, tuberculosis is the local manifestation of a general condition, and results from any cause or combination of causes which prevents the normal assimilation of the constituents necessary to repair loss of tissue, and which material must be derived from the food consumed.

When treating this disease it is well always to keep in mind that it is not a mechanical, but a physiological and chemical problem to be solved, and it can be done in no other way. We know that when the waste is more than the repair through want of material or assimilation, it is a mere matter of time until some part of the machinery breaks down; whether it is the spinal muscles in the young, on one side more than the other (curvatures); manifests its presence in the lungs; in the opening afresh of scars, retraction of mucous membranes, muscles and tendons, disuniting of the ends of old fractured bones as seen in long continued cases of scurvy due to the

absence of tissue forming food, which to maintain its vitality necessitates drafts on that already stored in the living organism (Query: What kind of a microbe is at work here?); or as was seen in the ravages of typhoid and typhus fever in the famine districts of Russia and Ireland, it assumed every form of disease. The grey hair creeping in here and there among the more abundant youthful color; the first tiny outline of the inevitable "crowsfoot;" the shrunken muscle, the slight defect in vision, the hardly perceptible totter in the once firm step, the superficial veins so prominent as to clearly outline their tortuous course—seeming to be filled with air rather than blood—the inability to devote as many hours as formerly to mental or physical activity; the neurotic protest so quickly entered when we encroach upon the allotted hours of rest, all these tell us of the inevitable natural waste greater than the repair that will come to each one when going down the hill of life—a daily draft on the reserve to carry us along, and when this is exhausted the human engine will cease to work. In the young this condition is unnatural; they are danger signals; nature's red-lights hung out along the route, which must be heeded or some part will break down, perhaps be irretrievably ruined. It therefore should be our constant endeavor to recognize this condition in its inception, and, if possible, remove the cause before it is too late. The plaster jacket is a valuable aid in treating curvatures of the spine, but it is far more creditable to prevent the weakening of the muscle, by recognizing in its inception the pathological condition which leads to this and other lesions. Remember that chemical support for one muscle will make mechanical support for the spine unnecessary. Such a course is better for the patient, and more in accordance with the object of the profession. Dr. Lewis A. Sayre was a surgeon among surgeons in his specialty, but he could have added greater laurels to his crown had he more earnestly directed our attention to the primary condition which really made his specialty a necessity. It occurred to me at the time when Dr. Weir Mitchell was experimenting with and eulogizing that short-lived well digger's outfit to be used for the cure of locomotor ataxia, that a man having such unbounded influence with his brethren could more creditably have employed his time teaching how to recognize in a patient the pathological condition, which as he believed, led to the use of his next-door-to-a-hangman's outfit; and I still hold the same opinion. The most of us seem to have forgotten the old but true saying: "An ounce of prevention is worth a pound of cure." And here let me say that the cause assigned like the cures recommended for pulmonary tuberculosis are too numerous to mention, and this alone is undeniable proof that at the present time both are unknown factors.

Believing that tuberculosis is due to deranged physiological action and not to the introduction from without of any new element, I endeaver to make the patient understand the necessity of supplying the system with the most nourishing food, carbohydrates and tissue forming products. Drink not less than two quarts of whole milk, taken from a cow, not with calf, during 24 hours and eat all the fat that the stomach will tolerate. Olive oil eaten with the other food is an excellent substitute where animal oil cannot be taken. I insist upon outdoor employment for both sexes, in order to keep them in the fresh air, and, as far as possible, their thoughts from themselves. When indoors, living in well ventilated rooms, and at night fit a board a foot in diameter to the lower part of the inside window frame, raise the sash not quite to the top of the board, and this will afford a current of fresh air without any perceptible draft. What I like better is a two-inch pipe inserted a foot from the floor and even with the outside wall of the house and the cold air can be siphoned to within two inches of the floor and to the occupant, the imperceptible current spreads evenly over the floor, rising as the colder portion comes in. Male patients can easily comply with these orders, but the females find it difficult to do so. Therefore I advise that they live an easy distance from some town that they may have an object for a daily trip, to procure the family supplies, mail, etc. These are some of the incentives to go; the desire to get back to the family and mid-day or evening meal, which exercise in the fresh air makes them thoroughly enjoy, is the incentive for the return. Driving for health without an object becomes monotonous and therefore injurious, and must be vibrated in some way. With regard to climatic change, this depends upon circumstances as to whether or not it will prove beneficial. To those who can leave all care behind, it certainly is well to try what change of air and scene will do, for it will under such circumstances, in many cases prove beneficial. On the other hand, if the patient is in moderate circumstances, with anxiety as to expenses, he will have a better chance for recovery at home; as it is worry, not work, that kills. The first question then is, is it a suitable case to send away? I advise that the avoidance of fashionable hotels and saitariums, where mind with mind doth blend only to vie with each other as to how many outside garments they can exhibit during the day. Such places are not desirable for invalids.

We are told that man's days upon earth are three score and ten years. At present the average is 42, leaving a gap of 28 years to be added, and this in time will be accomplished by hygiene rather than medicinal measures, for the 28 minus years is the penalty paid for the violtion of hygienic laws.

How frequently, especially in large cities, we meet with patients that our judgment tells us should be sent to the meat market instead of the drug store—the supposed disease being the cry of starving nerves for more tissue forming material. It is from this class that tuberculous cases are largely recruited.

When treating a case of pulmonary tuberculosis we should remember that the per cent. of cures is not greater than in epilepsy, hydrophobia or tetanus. There can be no doubt but the fresh air treatment of pulmonary tuberculosis is an essential part which, with cleanliness, seems to have annihilated those former terrors, hospital gangrene and child-bed fever. I protest against exposing the patients in cots to extreme cold, or using this plan, under any circumstances, as they will derive more benefit by outdoor objective exercise; attending to a garden of some kind, raising poultry, etc., work suitable for both sexes. Robe and disrobe in comfortable rooms, for

fresh air artificially warmed (steam heat) is just as healthy and much more pleasant than that which is extremely cold. Cold air may irritate the patient and stimulate the nervous system in the wrong direction, and one hour of such treatment will require four hours of rest for recovery from its baneful influences. Again, some seem to have forgotten the necessity for the consumption of all the tissue forming and heat producing food possible. Of course physicians are only human, and subject to the same feeling as the rest of the race. Some are prone to be carried away by new fads, losing sight of everything else; jumping at conclusions and stating them as facts, only to shortly abandon the phantom of treatment which they have blindly followed. In their retreat they frequently overlook valuable therapeutic measures.

When riding horseback the movement of the clothes gives to the body a cloth massage, causing an increased circulation, which is very irvigorating. It also causes an increased elimination of carbonic acid, which must be a relief for weak lungs. With one-third the clothing a person on horseback can keep more comfortable on a cold day than when quietly seated in a carriage. A vehicle without springs driven over a moderately rough road, more nearly resembles a horseback ride than any other substitute; it is walking and riding at the same time. Walking is said to increase blood circulation, producing a healthy glow. True, but how much of this is due to cloth massage? In a tight-fitting shoe the foot feels the cold more acutely than when encased in one of the same material roomy enough to admit of a stocking massage.

A pulmonary tuberculous patient reminds me of an old man, for both can say with the Psalmist: "I die daily." They go out daily for fuel, but are unable to secure enough to keep them warm, so they are forced to use some of the furniture for this purpose. This is repeated until the interior is consumed, when they are obliged to vacate the wrecked home.

At the foot of a mountain in the West there has been erected a sanitarium, with all the modern conveniences for the treatment of consumptives, but there is no provision for daily exercise. Such insti tutions should have rules for daily outdoor exercise by walking, riding or the various games, etc., under competent attendants. The dining room should be a long distance from the main building, so that three times a day at least the inmates may have a compulsory open air objective walk.

Hjllsboro, Ills. AMOS SAWYER, M.D.

A Bureau of Ambulances.—Roosevelt Hospital has on March 1 withdrawn its emergency service, leaving uncovered a strip of three miles on the west side from which 5,000 calls were received in 1908; for each of these it took the Roosevelt ambulances an average of forty-six minutes to convey the patient through the congested streets. The State Charities Aid Association urges the necessity of a Central Bureau of Ambulances to be placed under the Trustees of Bellevue and allied hospitals for Manhattan and Bronx; for other boroughs, under the Department of Charities. There certainly seems necessity for some such step.

RETROSPECTIVE

Malaria.—In 1897 Ross found the pigmented, half-moon shaped parasites in the stomach of the anopheles; after ingestion this malaria plasmodium undergoes further development, a sexual cycle; man contracts malaria only by the bites of these infected insects, being an intermediate host for the parasite, since the latter undergoes its highest development only after it reaches the mosquito. There are three species of plasmodium causing malaria in man: Plasmodium praecox (parasite of aestivo-autumnal fever); Plasmodium vivax (of tertian fever); Plasmodium malariae (of quartan fever). (Rickett's Infection, Immunity and Serum Therapy.)

The blood of a sufferer from tertian fever, when examined at the end of the febrile paroxysm or at the beginning of the afebrile stage, presents the plasmodia vivax within the erethrocytes as pale, rather clear bodies, about one-fifth the diameter of the corpuscle, and showing in fresh specimens an active ameboid movement; they are difficult to recognize in unstained specimens. They increase in size gradually and after eighteen hours, when they begin to acquire pigment, they are more easily recognized; after twenty-four hours the pigment has increased markedly and the erethrocytes are swollen and pale; in stained preparations the periphery of the parasite stains more deeply than the center and gives it a pronounced ring form; at the end of thirty-six hours they have increased noticeably in size and their ameboid motion is less. Shortly before the next attack (forty-eight hours after the preceding one) the pigment assembles into one or two groups in the center of the parasite and clear hyaline points begin to appear. These are the young endocellular parasites which are formed by division of the nucleus of the mother cell; they gradually increase in number and size; and, as the erethrocytes disintegrate they are discharged, from fifteen to twenty-five of them, as young parasites. This completes the asexual cycle, which has lasted forty-eight hours, and the young forms then begin a new cycle after penetrating other red corpuscles. The mother cell is the sporocyte; the offspring the merozoites; the process of division schizogony.

Besides these asexual cells, there are two sexual cells, a male and a female, which grow to adult size in the red corpuscles, acquire pigment and eventually become free. They differ from the asexual cell in that the pigment continues to be uniformly distributed; nor does either give rise to young parasites by division. The male cell (microgametocyte, 8-9 microns) has a clear protoplasm, is much the more numerous and is smaller than the female (macrogamete, 10-14 microns); the latter has a granular protoplasm. These sexual cells undergo no further development in the body of man; and in order that the sexual process be completed the two cells must first gain entrance into the stomach of the female anopheles. A further step in the sexual process may be seen in drop preparations of the blood, although this step does not occur in the human body. Ten to twenty minutes after the making of such a preparation the male cells, after a period of agitation, discharge from four to eight long, thin flagella (microgametes or

spermatozoa) which thrash about violently and eventually come in contact with a female cell, which they enter and become then unrecognizable. This is the process of sporageny which is instituted and complete din the stomach of the anopheles. Following impregnation the female cell gradually assumes a worm-like or sickle shape (ookinet) penetrates the wall of the stomach and becomes encapsulated (oocyst). Forty-eight hours after the mosquito has sucked malarial blood all the female cells have reached this stage and no more free parasites are found in the stomach. Five days after the blood was taken the oocyst has increased about sixfold in size and has formed within itself a number of small spheres, which are called daughter cysts or sporoblasts. The latter soon acquire a finely striated appearance, due to the formation of hundreds of "germinal rods" or sickle-shaped bodies (sporozoites), which are young malarial parasites, thrown into the body cavity of the mosquito by the rupture of the oocyst and are carried to its salivary glands by the lymphatic circulation in from eight to ten days; these are the cells which are inoculated into man by the mosquito's bite. The asexual cycle of the plasmodium malariae, of quartan parasite is identical with that of the tertian except that seventy-two hours are required for its conpletion; it contains more pigment, and on division eight or at most fourteen, young parasites are found, in contrast to the score or so of the tertian parasite. The erethrocytes do not become large and pale. The sexual cells cannot be distinguished from those of the tertian parasite, being on the whole a trifle smaller; the sexual cycle is also as in the tertian variety.

The plasmodium praecox, of aestivo-autumnal is one-half to two-thirds the size of the tertian parasite; this difference is constant in the various stages of development of the asexual cell; it divides eventually into eight to twenty-five young parasites, the cycle occupying from twelve to twenty-four hours. As in quartan fever the erethrocytes do not become swollen and pale, but even appear darker in color, because of some shrinking. The sexual cells in aestivo-autumnal fever are characteristic. At first they do not differ in shape from the asexual cells; but as they grow older they gradually assume a half-moon shape, in one edge of the erethrocyte, reaching a length equal to one and one-half diameters of the red cell. At this time a fine line draws across the margin of the plasmodium represents the margin of the erethrocyte. This form is, however, only temporary; they subsequently assume first a spindle and then a spherical form. As in the other parasites the male cell is rather clear and the female granular. When mounted in a hanging drop the male cell liberates flagella which genetrate the female cells. Here, as also in the sexual cycle, this phenomenon does not occur in the human body, but only in the mosquito. The plasmodia of tertian and quertan fevers undergo division while in the circulating blood; and when peripheral blood is examined at the end of the afebrile stage the young cells may be found extracellular; this is not the case, however, in aestivo-autumnal fever. In the latter, for unknown reasons, the adult cells withdraw to the internal organs, especially in the spleen, bone, marrow and brain, while division takes place in the minute vessels. Hence if the peripheral blood is eaxmined before and during the febrile stage few or no dividing cells or young parasites are seen.

Regarding incubation: Ten or twelve days must follow inoculation by an infected mosquito for the onset of a paroxysm; the period may rarely be as short as six days, this depending probably on the number of organisms inoculated. The infection does not seem to be transmitted to the offspring of the mosquito; hence the bites of young anopheles do not convey the disease unless they have also sucked malarial blood. The plasmodium praecox (of aestivo-autumnal or remittent or continuous malarial fever) seems to be more virulent than the tertian or quartan. Nor are all cases of tertian or quartan fever equally severe; there may be differences both in virulence and in the resistance of the individual; some of the symptoms are due to localization of the parasites (in the brain, for example) rather than to special toxicity. The longer paroxysms and shorter intermissions of the aestivo-autumnal type are by reason that all the cells do not divide within a relatively short time (as in the quartan and tertian types), but the process of division rather stretches over from twenty-four hours to two days. When the last cells of one generation are dividing (perhaps after the fever has gone down) the first cells of the succeeding generation are well on toward maturity and their division within a short time inaugurates a new paroxysm; this would explain the brief intermission. As the disease lasts longer, or as relapses develop the periods of division of the parasite are less sharply linked and a course with an irregularly continuous fever may be established.

The quotidian (daily) type of malarial paroxysm results either from double tertian or from triple quartan infection; in either instance a generation of plasmodia matures and divides every twenty-four hours.

There may be mixed infection, with two kinds of parasites—usually that of aestivo-autumnal fever combined with either the tertian or the quartan parasite. The clinical course is naturally complicated. The melanuria of malarial fevers is due to the fact that the parasites absorb the hemoglobin, transfer it into melanin by their metabolic activities and liberate this substance at the time of cell division; the anaemia results from the destruction of the erethrocytes. In malarial cachexia there is not only an insufficiency of the blood-forming organs, but other parenchymatous organs have suffered by reason of the prolonged intoxication; the blood-forming organs cannot keep pace with the erethrocyte destruction. Various severe neuralgias may accompany malarial infection and subside under quinine. Such cerebral symptoms as coma may occur, due to plasmodium accumulations in the minute cerebral vessels which may thus be even accluded; similar conditions induce the malarial diarrhoeas.

The symptoms of the tertian, quartan and quotidian types (all grouped under the title "Intermittent malarial fever") are akin, except that in tertian the parasite completes its cycle in forty-eight hours, the paroxysms occurring every third day; in quartan every fourth day (72 hours); and daily in quotidian. There are usually three stages of the paroxysm—

cold, hot and sweating; these usually occur in the morning, with perhaps premonitory disagreeable sensations. The cold stage is begun by yawning, lassitude and headache, with rapid rise of temperature, perhaps nausea and vomiting, followed by shivering and later violent shaking with chattering of the teeth. The chill lasts from ten minutes to two hours. The internal temperature rises sometimes to 106 degrees whilst the skin is blue and cold. There is severe headache; the pulse is small and quick. The hot stage lasts from one-half to five hours; the face is flushed, the skin red and hot, the pulse is full and bounding; there is great thirst and a throbbing headache. The sweating stage lasts two to four hours; the entire body is covered with perspiration; the fever and all other symptoms abate; sleep follows. The spleen can generally be palpated during the attack. The cold stage may be absent or there may be only a chilly feeling; sweating may be slight in these atypical cases. There is a fair sense of well-being between the attacks. Spontaneous recovery, temporary improvement with recurrence, and malarial cachexia are the terminations if untreated.

The symptomatology of the aestivo-autumnal form varies greatly. The fever may be regularly intermittent but at longer intervals than in the tertian; the paroxysms may be anticipated or retarded, making the fever continuous with exacerbations. The individual attacks are of greater duration than the tertian. The cold stage is often absent; in the hot the temperature often falls by lysis. One is likely to think of typhoid. Spontaneous recovery may recover after a week or ten days, there may be remissions and exacerbations; the disease may assume the pernicious type, which is always caused by the aestivo-autumnal parasite. There are three forms of pernicious malarial fever: the comatose, in which there is delirium or sudden coma, with high temperature; the algid or asthenic, beginning with vomiting and great prostration, having a normal or subnormal, temperature, and there being perhaps severe diarrhoea and suppression of urine; the hemorrhagic form, which includes malarial hemoglobinuria and "black water fever" (not strictly malaria but a complication probably precipitated by insufficient or improper administration of quinine). Malarial cachexia is a chronic malarial state in which there is secondary anaemia with splenic enlargement. We diagnose malaria by the periodicity, the enlarged spleen, the blood appearances and the test of quinine treatment; we differentiate from typhoid by the absence of the Widal reaction; from septic processes by the absence of leucocytosis, from yellow fever. The blood examination is the surest test. Tertian and quartan malaria are recovered from; sometimes they cease spontaneously, or they recur or become chronic. The remittent type is more protracted; and may become chronic or pernicious. The untreated patient with pernicious malaria may die within a few days. Treatment will cure malarial cachexia. We treat the malarias with powdered quinine in capsules; five to ten grains of the sulphate t. i. d. will generally cure the intermittent types, especially if we keep the patient in bed until the time for one or two paroxysms have passed; upon this being done attacks often stop spontaneously for a time even without administering quinine. We need larger doses in the remittent types. In pernicious anaemia hydrochlorate of quinine and urea are essential; two grains is the minimal dose and twenty grains the maximal; we may have to give it by hypodermic every three hours until there is improvement, when the sulphate by mouth may be substituted. In malarial cachexia we use a combination of iron, arsenic and quinine; ℞ methylene blue, Warburg's tincture, tincture iodine, nux vomica are other medicaments. Tully's powder will give sleep and relief from pain. Whiskey and hot lemonade may be required; blankets and hot bottles during chills.

Individual prophylaxis may be secured by means of quinine, from 9 to 15 grains daily. Koch's procedure is to order a dose of 15 grains of quinine every tenth and eleventh day, if fever still develops, every ninth and tenth day. Ethereal oils (of cloves or of pennyroyal) are applied to the exposed skin; mosquito netting is used. The means of general prophylaxis are: The draining of swampy places and of pools of water where anopheles may deposit its eggs; this cannot always be accomplished. Covering pools of water with petroleum—a fairly successful procedure; every square meter requires one-half liter of the oil, which must be added afresh every seven or eight days; this layer of oil excludes the air from the larvae mosquitoes and they drown. Koch's method of exterminating malaria is to seek out all cases and to destroy the parasites by appropriate quinine treatment; if all the plasmodia in a community are destroyed the disease cannot again become endemic, unless it is introduced from without or unless infected mosquitoes are imported. Infection is considered to take place chiefly by night; the virus does not seem to be carried by the anopheles far, certainly not further than two or three miles from an infected district.

Enlargement of the Heart and Liver an Early Symptom of Phthisis.—S. von Unterburger, of St. Petersburg, has found that: 1. The phthisical process is in the lungs, the danger in the heart. 2. A small heart is not a symptom predisposing to consumption. 3. The size of the heart must be determined by percussion according to the Roentgen pictures; no other method is reliable. 4. The relative dulness can be determined only by light percussion. 5. The rapid enlargement of the right heart in phthisis is related to a congenital anlage and is embryologically closely connected with congenital predisposition to tuberculosis in general. 6. Exciting causes of the enlargement of the right heart are: obstruction in the lesser circulation, the toxins of tubercle bacilli and other microbes, and the toxins of biologico-chemical products of metabolism. 7. The liver is more sensitive than any other organ in its reaction to enlargement and weakness of the heart. 8. A clear picture of enlargement of the liver, and hence weakness of the heart, is obtained not by palpation, but by percussion from below upward toward the border of the liver. In most cases a congested liver is also quite sensitive to light palpation. 9. Enlargement of the heart and liver forms a very important link in the chain of early clinical symptoms of pulmonary tuberculosis.

Enlarged Liver in Infants.—Huchard and Fiessinger give 5 chief causes (Journal des Praticiens, Dec. 26, 1908). 1, Paludism (chronic malaria). 2, Syphilis of congenital variety. 3, Leukemia. 4, Pseudoleukemic anemia. 5, Rickets.

They remind us, for the differential, of the signs of hereditary syphilis: pemphigus, keratitis, coryza, epiphyseal separations. In the form of congenital syphilis known as "splenohepatic," the spleen is very large; the liver may be found smooth, and extending so low as the crest of the ilium. As a result, the abdomen is rounded and projecting, even distended by ascites when the sclerotic process has advanced. We are warned that tuberculous nodules may occur in syphilitic cases.

Mental Symptoms Due to Dechloridization.—Courment and Cremieu (Jour. des Praticiens, Dec. 26, 1908), draw attention to the evils which follow prolonged dechloridization. The nervous crises disappear at first, but there may supervene a dangerous state of mental depression characterized by melancholy, and attempts at suicide. Immediate employment of the chloride of sodium is indicated.

Voisin and Rendu advise: Ten days of 4 grams of sodium bromide, ten days of 8 to 10 grams and a third period of ten days with neither bromide nor chloride of sodium, the two previous periods having been on normal diet. They say that the deprivation of salt is less harmful if the bromide be not given at the time.

Some Italian authorities condemn treatment by dechloridization. They believe it weakens the patient.

It was Andre Viteman who in 1907 showed that dechloridization facilitated the absorption of bromide salts within the subarachnoidean spaces.

Generalized Tremor of Hysterical Cause.—Babinski (Jour. des Praticiens, an. 21, no. 38), reports the case of a young married woman who, for a year, has suffered tremor involving even the eye muscles and muscles of expression. The atypical form of tremor excluded other diseases, as of Graves' disease or Paralysis Agitans. Babinski tells how a student imitated for him the movements of the woman. In this lies the essential nature of hysterical and hysteroid conditions "creating morbid symptoms which can be reproduced by suggestion or simulation."

Cystitis Due to Influenza.—Among other infections, that of "grip" may cause inflammation and ulceration of the vesicle mucosa, says Albarran of the Neckar Hospital, Paris (Jour. des Praticiens, an. 21, no. 38). Avoid vesicants. The use of blisters of cantharides has been followed by nephritis of very dangerous, even fatal character. The urinary bladder becomes affected via the kidney. It is therefore prudent during treatment of influenza, to guard against the toxins which are being so freely thrown upon the renal substance. Wash the bladder with 1:1000 nitrate of silver.

Awakening of Medical Study in Persia.—Editorially, Le Progres Medical, Jan. 9, 1909, describes the reasons, of a political nature, which prevented Persian medicine from associating herself with our progress. Shah Nasreddin had formally forbidden his subjects to study in Europe.

Diseases were (1) sthenic or (2) asthenic. (Cf. paper by Dr. H. G. Webster on Dr. Rush in which this classification of Brown's is reverted to—Medical Library and Historical Journal, Sept., 1906.)

In 1905 Shah Mouzaffereddin reconstituted the medical school at his capital, Teheran, and called to his aid Majors Gurges and Galley, from the College at Lyons, to be in charge of the courses of medicine and surgery. Dr. Emir Khan, just leaving the school at Val-de-Grace, became chief of the Department of Anatomy. Dantan and Olmer took the natural science branches including chemistry and physics.

After three years, in 1908, eleven men were given diplomas.

Laboratory work is deficient. Much equipment is lacking at this stage. But the result of political changes is seen in the number of Persians now taking medical and other scientific courses in Europe, and who, on going home, will be able to assist materially in the growth of good schools and modern opinions in medical affairs.

Mental Symptoms in Various Myopathies.—Nicola Sforza (Il Policlinico, an. xii, fasc 2, sezion. medica) brings up the question, first advanced by Vizioli, of the state of mind in diseases of the type of chorea, tic, tabes, syringomyelia, paralysis agitans, and the progressive muscular atrophies.

Some alteration or impairment is probable. Duchenne, Benedikt, Jules Simon, P. Marie, Guinon and Westphal in reports extending from 1861 to 1884 show cases whose mental defects occurred pari passu.

The essential idea of education through the motor system is harmonious with all belief in Sforza's thesis. He has a case presenting many stigmas of degeneration: trococephaly, clinocephaly, plagiocephaly, plagioprosopia, vertebral and thoracic malformations, atrophy of all the muscles and pseudohypertrophy of the glutei and thigh muscles—marked mental deficiency. Electrical reactions weak, no inversion of formula.

Studies of paralysis agitans showing intramuscular changes do not completely disprove the centric origin or influence of the disease. When the motor function is impaired the mental powers are by so much interfered with or restricted.

Lesions of Aortic Orifice Due to Arterial Increase of Tension.—L. A. Amblard, of Vittel, recalls the two theories of relation of arterio-sclerosis and arterial increased tension (Jour. des Praticiens, January 2, 1909). Careful experiments show that loss of elasticity in the walls of arteries is sufficient alone to cause "serious and progressive" lesions in the ascending aorta and in its valves of origin. The studies of Huchard are commented on, and his distinction of two variations in the aortic second sounds is confirmed and explained by experiments. The aortic second may have the timbre characterized as "coup de martel" stroke of a hammer. Or it may be the "bruit clangoreux" ringing suond. The former means elevation of arterial tension; the latter, dilation of the aorta, with or without arterial increased tension. His brief paper is well worth reading.

Temporary Treatment of Acute Mental Cases.—Instead of placing them in formal commitment, Damaye and Mezie advise some place, or part of a place, to which they may be taken, voluntarily, and if re-

covery permits, no stigma will follow the patient as he goes through life. The writers continue, by expressing some difference with the German school. Treatment is not entirely psychiatric. Indeed, it is therapeutic, and one may generalize: for manta, chloral; for nervous and excitable, bromide; for fears, morphine (never opium) in variable dosage. Add to this, laxatives, organotherapy in its modern extent. Lavage of stomach and intestine, so difficult in the home, in the hospital become easy and effectual. Hydrotherapy must be remembered. Methods employed to combat systemic infection are valuable in mental cases. Treatment must be prompt and vigorous if it may succeed.

Acute Gonorrhoea in Females.—Separation from family to avoid infection. Clean parts with thorough bathing of soap and water. If there is any vaginismus employ hot douches and calming suppositories. Permanganate of potassium in 1:1000 solution is excellent, and may alternate with 1:1000 sublimate douche. Use tampous to keep the vaginal walls distended. Some advise iodoform in oil, others glycerine for the tampons. The difficulty of treatment, continues Lavenaut (Jour. des Praticiens, Jan. 2, 1909), is due to the complicated structures involved. The glands of Bartholin have to be examined very closely and upon the success of their treatment will depend the chances of cure. Soft chancres of the vagina may be confused with gonorrheal ulcers. Pregnant women with condylomata may undergo a change in symptoms so that the swollen condylomata appear to be gonorrheal patches, and give rise to mechanical dystocia.

Deaver's Opinion Challenged by Hallopeau in Regard to Use of Morphine in Abdominal Cases.—Writing of a case of duodenal ulcer with perforation, laparotomy and cure, Hallopeau and Peter (Progres Medical, Jan. 9, 1909), take occasion to say that they insist on the value of morphine more especially because Deaver, of Philadelphia, has recently advised against it. (Deaver believes that morphine masks the symptoms and causes vomiting, and does not employ it in his appendicitis cases for this excellent reason.) In this case a diagnosis of appendicitis and general peritonitis was tentatively formed before surgical intervention. The morphine was administered after operation and the injection of 500 Gm. serum. More morphine was given after a succeeding administration of 1000 Gm. serum. The writers believe that the patient was made restless by the serum, and consequently used the narcotic. The injections of camphor and oil, frequently used, are given the credit of saving the patient's life.

Impetigo.—Railliet rather humorously tells us how simple it is to treat this disease: warm, wet applications to soften the crusts, followed by simple ointment with or without boric acid. He continues (Progres Medical, Jan. 2, 1909), however, with a warning that nephritis may develop. Minute care of the little patient includes watching all the trifles that make for comfort and safety; not alone to the sick one, for impetigo may assume the contagious form. Atonic or rebellious cases may do well with:

℞ Yellow oxide of mercury..... 0.5 Gm.
Oil of cade..... 1.0 Gm.
Simple anhydrous cerate.....20.0 Gm.

Very obstinate cases may require touching up with nitrate of silver. After recovery, some cases show areas of erythema and desquamating patches. For these, Railliet advises:

℞ Calomel ..... 1 Gm.
Oxide of zinc..... 6 Gm.
Lanoline ..... 6 Gm.
Vaseline .....10 Gm.
"Brocq"

We have to guard against the gastrointestinal troubles which rebellious and atonic cases offer as complications. Cod liver oil, syrup of iodide of iron, quinine and tonics of other sorts are indicated. Blepharitis, conjunctivitis and keratitis yield easily. Nephritis is common and transitory. A few instances of hematuria and death are known. Hypodermics of camphor in cardiac weakness are suggested; digitalis and caffeine are contraindicated.

Diseases of Female Genital System Causing Urinary Disturbance.—It is the part of prudence to examine the patient gynecologically and thoroughly when she complains of any of the common urinary disturbances, such as incontinence, scalding, frequent urination, turbidity or lumbar pains and sense of weight or pressure across the loins. Barnes, in 1875, held the rule of giving a complete pelvic examination in any vesical case. The intimate connection of bladder and uterus by peritoneum is known to anatomists. Testut, Barkow and Heule have known the distinctive shape of the female urinary bladder during distention to differ from the ovoid character it has in the wall. The female has the base of the bladder, its trigone and part of the base found resting upon the anterior vaginal wall. The organ lies back against vagina and uterus, the latter curving in such a fashion as to act as a main support. . Nervous and circulatory system are in close interrelation. Filippo Cuturi (Il Policlinico, an xiii, fasc 5, p. 140, et seg.) discusses theories of urination and rejects those of Esmarck, Finger and Landvis which have to do with conflicts of motor and sensory impulses. The ideas of Kness and Duval, too, he finds unsatisfactory, as they explain only conditions due to prostatic abnormality. Guyon says well in attributing to the vesical tension the desire of urinating; in the normal condition, sensibility is most acute in the deep ureter and the neck of the bladder, but this sensibility is aroused by the state of the entire organ. In the pathologic state the contact sense and the sense of tension are predominant. This theory is the best in cases of dysuria, pressure of the uterus arousing the contact and pressure sense to abnormal degree. During menstruation there occurs an injection of the vesical rete mucosa. Any inflammatory process is aggravated at this time. Pregnancy increases urinary troubles as much by mechanical interference as by the changes in the mucosa similar to those caused by menstruation.

Actinomycosis in man, with suppuration uncomplicated by the presence of other pathogenic microorganisms, cure by iodin. The case occurring in a stableman of 25 years is described by Giovanni Antonelli (Il policlinico, an xiv, fasc 15). The importance of early diagnosis is shown, for no mixed infection had time to develop, and the case seems to point

to an answer to the question as to whether suppuration can occur due to the ray-fungus, in this instance yes. A Pravaz syringe was plunged deeply into the tumor and a brownish-green, puriform, turbid and odorless liquid, about 3 cm., extracted. C. Rampagni developed pure cultures of actinomyces from this and established the identity with the micro-organism of actinomycosis bovis. The practical side of the case, treatment, was at once decided upon to consist of injections of iodid of potassium in 1 per cent. solution, and the administration of ascending doses of sodium iodid. In spite of the symptoms of local reaction to the iodid of potassium, treatment was persisted in, and a gradual decrease in the size of the tumor occurred, until cure was attained. The opinion of Antonelli inclines to a belief in the specific action of iodid in such cases. He remarks on the greater frequency of cases of human actinomycosis in Austria, Germania and France over those reported from Italian sources.

Rabies Transmitted by Inhaled Particles.—Galtier in 1890 thought his experiments disproved this possibility. Alaneled Fermi (Il Policlinico, fasc 20, vol. xiv, pp. 615, 616) raises the question and brings forward the case reported by dal Pace in which a dog suffering from rabies touched his tongue to the nose of the patient, who contracted the disease. Fermi repeated with every precaution experiments in which no possible abrasion of the nasal epithelium was allowed and in these he finds that the virus is able to penetrate nasal mucous membrane when it cannot succeed in conjunctival or vaginal. It appears that rats and mice contract rabies by simple bathing of the mucosa of the nose with virus, while guinea pigs resist, so bearing out the proportion of their resistance, as known, to the effect of the disease. We may conclude that in human cases the fact that the nasal mucosa has become exposed to infection even when no wound has occurred, the rational procedure is to advise Pasteur treatment.

Alterations in Fibers of the Anterior Commissure and in Those of the Corpus Callosum in Old Alcoholics.—A. Bignami (Il Policlinico, an. xiv, fasc. 15) reports a case, which he adds to those already described by Marchiafava and himself (Gould's Year Book, Med. vol., 1905, p. 398, and Rev. di Patologia nervosa e mentale, Dec., 1903). The fibers appear to lie in three tracts, a dorsal and a ventral tract being spared in the anterior commisure, while a central tract suffers. The olfactory fibers are not affected. It is of some importance (in view of repeated studies agreeing that the commisural fibers of old alcoholics become more swollen, vascular and degenerating) to consider in what selective action alcohol assumes. Whether certain tracts are peculiarly sensitive to the poison, or whether the tracts vary according to the individual in their susceptibility remains obscure. Some particular forms of intellectual inco-ordination observed in alcoholics may be explainable through the fact of the commisural fibers being attacked.

Infantile Meningitis and Its Treatment.—Roque Macouzet, speaking before the Pedro Escobedo Medical Society of Mexico (El Observador Medico, vol. v, no. 4), classifies infantile meningitis as arising from (1) acute general infections, such as influenza, pneumonia, scarlatina or gastro intestinal conditions; (2) tuberculosis; (3) suppurations of the nose, throat or ear; (4) trauma; (5) marasmus and inanition. The exciting cause, micro-organismal as it may be, coming upon selected soil produces the disease. A specific form due to the meningococcus intracellularis of Weichselbaum, may be diagnosed by its recovery through lumbar puncture. Kernig's sign is esteemed highly in Mexico and is by its early recognition more valuable. In the treatment one must determine any cause of irritation, digestive or respiratory and treat each secundum artem. Lumbar puncture, which in babies is done between the third and fourth vertebrae, has not proven of more than diagnostic value, except when the tension of the cephalorachidian fluid indicates relief. Castor oil is administered with excellent results in Mexican practice.

Diagnosis of Pancreatic Disease.—Zoja (Il Policlinico, an. xiii, fasc 38, p. 1234) reports a necropsy from Parma. Like many or most pancreatic cases the story begins on the post mortem table. The patient, a woman of 63, previously robust, and taken ill with slight gastrointestinal symptoms, became suddenly very weak and developed intense icterus. The liver was enlarged. Below the liver, and at the level of the first and second lumbar vertebrae a mass was apparent on palpation giving transmission to the aortic impulse. Red blood cells 5,000,000, whites 12,000, hemoglobin 90 per cent. Urine contained biliary pigment. Feces contained fat, of which 20 per cent. was acid soap. On autopsy the common bile duct was occluded, and it and the pancreas were profoundly sclerotic. The absence of pancreatic secretion seemed shown by a lessened saponification. It is important to observe that while pancreatin was administered and the patient maintained her body weight, nevertheless the icterus persisted and a continued failure to digest fats, that is, saponify them. The state of the blood contraindicated neoplasm.

In Psychiatry, as in infectious diseases, the best part of its future lies in the realm of prevention. R. Reed (Lancet. Clinic, Dec. 12, 1908), suggests as an improvement, greater individualization in our public school system. Sane instruction as to temperance in alcoholic stimulants should replace the exaggerated statements of many school physiologies, which by receiving the lie from the children's own personal observation in their own homes lead to a reaction of sentiment. The profession should make common cause with the propaganda against venereal diseases. Reed regards the spreading of habits of scientific thought and the extreme commercialism of everything modern, by their narrowing of the field for frank and innocent expression of emotion, as fruitful causes of insanity. The repression of emotions and natural instincts results in a source of mental autointoxication, while their temperate expression favors a "psychic catharsis;" hence mental cults and other things tending to produce introspection are fruitful causes of insanity. Reed would have established in every large city a hospital and clinic for the care of the acutely insane and those suffering from psychoses in process of development.

MISCELLANY

Europeans, it would seem, are beginning to realize the value of high building, with elevators, which lift people into the dust-free, sunlit, higher regions.

Cancer and Goitre.—It is believed that in Switzerland, where 4,000 die annually of cancer, the tendency to that disease is less in regions where goitre does not prevail.

The Problem of Congestion has, in one instance at least, been solved. The warden of one of our city prisons explained the escape of a pickpocket as being "due to congestion." The zeal of the latter in doing all he could to the salutary end of relieving this is commendable.

A New Antitoxin is stated to be discovered against pneumonia, septicemia and typhoid, by Dr. Timothy Leary, of Tufts College, the number of cases in which the vaccine has been successfully used is still too small to warrant a very optimistic statement. It is hoped to perfect a tuberculosis antitoxin in this institution by Dr. Leary and his associates.

Water Pollution and Sewage Disposal.—We are said, states American Medicine, to have God's own country; man's own backyard and the devil's own cesspool; but our sewage system is that of the prince of devils—the quintessence of cruel disregard of the rights of others. "Is it not time we started a crusade for natural water instead of filtered sewage?"

Medical Fees in Ancient Greece consisted originally in presents; but at the time of Hippocrates payment in money was already customary (N. Y. Med. Jour.). Physicians also received public praise, the "crown of honor," the freedom of the city, the privilege of eating at the King's table. Physicians employed by the state received a yearly salary. Rich people would pay enormous sums for successful treatment—as high as $200,000.

Vaccination; What It Is.—This is the title of an excellent pamphlet compiled by Dr. F. C. Curtis, dermatologist to the New York State Department of Health by which it is published. There is a history of smallpox, of Jenner's discovery, and many striking photographs are shown to illustrate the subject. Attention is particularly paid to the mild form of smallpox which has for some years past been prevalent in the State, but which retains many characteristics of the more virulent type and can be successfully met only by compulsory vaccination.

The Doctor First.—It is gratifying to have those in charge of the Emmanuel movement state with emphasis that all patients treated by the clergy will first have the care of a physician. A set of rules has been drawn up by an advisory board of physicians who believe in the Emmanuel movement but also consider that new methods are necessary and in order. The rules are designed to avoid the earlier mistakes made by the clergy among those patients who have no family physicians. The rules have been adopted by the clergy; this at any rate is a sensible step.

Changes at Columbia.—At a recent meeting of the Trustees gifts of $2,000 (!) were reported for salaries of the medical school. The regrettable announcement is made that Dr. T. Mitchell Prudden will retire from the Chair of Pathology in the College of Physicians and Surgeons at the close of the academic year; Dr. William G. McCallum, who has for twelve years past been engaged in the Johns Hopkins Hospital and Medical School, and who is now its Professor of Pathological Physiology and Lecturer on Forensic Medicine, was elected to take Dr. Prudden's place.

Physicians Rejected.—More than a dozen New York physicians were recently thrown out in a Washington examination for the Medical Corps, and of the fourteen who passed successfully, out of the fifty-six who offered themselves, not one is from New York. Those who came up to the standards will be sent to the Army Medical School for eight months, when they will be examined and either rejected or receive their commissions as First Lieutenants. The army is anxious to recruit the Medical Corps to its full strength, but it is having difficulty in finding men suitable for the positions.

How Women Face Suffering and Death.—A British colleague has observed: Tell the man of higher type and greater intelligence that he is facing death and he begins to fight, demands a consultation, talks of going to specialists and fights grimly to the finish. Tell a woman the same facts, and she lies back to await her fate. All women are fatalists. But tell a man that he has one chance in a thousand to recover if he will undergo an operation, and he will trust rather to his own strength and endurance than endure the knife. The woman will choose the thousandth chance and submit with amazing calmness to the operation.

False Hair, Dr. Waldstein, State professor of fine art at Cambridge University has found, was worn extensively as long ago as 5,000 years before the Christian era. From Egyptian excavations we learn that the mode of hair dressing in ancient Rome was subject to frequent change, "and the ladies of that period found artificial aid just as necessary as in the present day." In Grecian explorations, perfect sets of teeth, gold-filled, are found, made very much on the plan dentists adopt to-day. The ancient Greeks and Romans habitually used the razor, but oil, not soap, was used to soften the beard. Tempora mutantur seems an erroneous sentiment; for times do not greatly change, certainly not regarding fashions and physical customs.

Leprosy.—It is well observed that never does the knowledge of the presence of leprosy in a resident of the North Atlantic Coast States become public without directing attention to the senseless, panic fear bred by this disease among the non-medical. Philadelphia recently had such a case, and the lay press described the family of the victim "without a home and the father unable to obtain employment" as being "in a sorry plight." Only a short time ago a leper was being hunted like a wild beast in West Virginia, and the unhappy condition of a discharged United States soldier suffering from the disease has called forth much comment. A proper institution for the treatment of the afflicted and popular education as to the real nature of leprosy are indeed sorely needed.

THE BLOOD IN INFANCY AND CHILDHOOD.

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PART II.

DISEASES OF THE NERVOUS SYSTEM.

CASE XXIX:—Chorea.—N. L. 12 years, female. Has had slight movements, "nervous" for two weeks. Slight systolic murmur over pulmonary area (functional). As the movements increased in severity the heart became more involved. a presystolic murmur developing over mitral area. Finally with improvement in the chorea, the heart improved, and at time of discharge the murmurs were both very slight. Blood examination at beginning showed Hb. 69 per cent, red blood cells moderate variation in size, pale centers. White blood cells 11,000. Differential count. Polymorphonuclears 68.1 per cen. Eosinophiles 5.3 per cent. Granualrs 73.4 per cent. Normal 73. Lymphocytes 26.6. Non-granulars. Normal 27 per cent. Total white blood cells 7,500

A very normal differential, except the 5 per cent eosinophiles which I regard as accidental.

Second examination, Hb. 60 per cent. Third, .60. Fourth Hb. 57 per cent. Differential count, polymorphonuclears 62.9. Granulars. Normal 73 per cent. Lymphocytes 37.9. Non-granulars. Normal 27 per cent.

This shows the differential count of a rather severe and relative decrease in granulars and relative increase in non-granulars. Fifth examination, Hb., 75 per cent.; 6th, 60; 7th, 47; 8th, 59; 9th, 62. The patient then passed from under observation.

CASE XXX:—Chorea.—J. V., 11 years, male. For the past five weeks he has had movements of the mouth and hands. Examination of the heart shows a systolic murmur over the pulmonary area (functional). The heart was not further involved Hb. 65 per cent. Red blood cells marked variation in size, pale centers. White blood cells 10,200. Differential count, polymorphonuclears 53 per cent. Eosinophiles 11. Normal 73 per cent. Granulars 54. Lymphocytes 46. Non-granulars. Normal 27 per cent.

We see here the blood picture of an anaemia, slight increase in the w. b. c. Relative decrease in the granulars and relative increase in the non-granulars.

CASE XXXI:—Epidemic Cerebro-spinal Meningitis.—P. K., male, 4 years. Past 4 days, pain in stomach and head, retching and vomiting, delirium, slight cough. Looks very ill. Restless and irritable. "Tache cerebrale" slight. Few old petechial spots. Moderate retraction neck. Abdomen slightly sunken and held rigidly. T. 103½, P. 150, R. 44. Lumbar puncture ℥ii, turbid fluid. Smear showed very many meningococci. Blood examination showed red blood cells 5,000,000. Hb. 80 per cent. Leucocytes 26,000. Differential count, polymorphonuclears 87 per cent. Granular. Normal 56. Lymphocytes 13. Non-granular. Normal 44.

Here we have a marked leucocytosis with a marked relative increase in the granulars and a marked relative decrease in the non-granulars. The boy died on the eighth day. T. just before death, 105½ degrees.

DISEASES OF THE BLOOD.

CASE XXXII:—Simple Anaemia.—M. P., 14 years, female. During past two months has lost eight pounds in weight. Is much paler, has headaches and dizziness. Appetite irregular. Shortness of breath. Examination of the blood showed Hb. 48 per cent. Red blood cells were of equal size, and had large pale centers. Differential blood count. Polymorphonuclears 58. Eosinophiles 2. Mast cells 3. Granulars 63. Normal 75. Lymphocytes 37. Non-granulars. Normal 27 per cent.

This shows a diminution in granular cells and increase in non-granular cells as we expect in anaemia.

CASE XXXIII:—Simple Anaemia.—F. B., male, 11 years. For past two weeks has had fainting, with nausea, headache. Has been growing yellow. Blood examination, Hb. 55 per cent. Differential count. Polymorphonuclears 38 per cent. Eosinophiles 7 per cent. Granulars 45 per cent. Normal 73. Lymphocyates 35. Non-granulars. Normal 27.

This shows a marked relative decrease in granulars and a marked relative increase in non-granulars.

CASEXXXIV:—Splenic Anaemia of Infancy.—S. S., male, 9 months. The baby is being fed on goats' milk. The mother thinks it has not gained as it should. Has a little cold. Constipated. Sleeps poorly, and cries much. Spleen is two inches below the level of the umbilicus. Blood examination shows Hb. 30 per cent. Red blood cells 3,192,000. White blood cells, 16,500. Polymorphonuclears 34. Eosinophiles 4. Basophiles 3. Myelocytes 1. Granulars 42. Normal 38. Large Lymphocytes 26. Small Lymphocytes 30. Transitionals 3. Non-granulars 58. Normal 62.

Five nucleated red blood cells were met, four megaloblasts and one normoblast. Red blood cells show poikilocytosis and megalocytes.

Slight leucocytosis. Polymorphonuclears increased slightly. Eosinophiles increased. Myelocytes present. Lymphocytes slightly decreased. Nucleateored blood cells, pockilocytosis.

CASE XXXV:—Purpura Hemorrhagica.—R. D., male, 9 years. Came under treatment first for an intractable nose bleed, which was controlled with much difficulty. The mother said that before the occurrence of this nose bleed he had spots on his body for about two weeks. Examinations of his skin and mucous membranes showed purpuric spots in all visible places, face, scalp, arms, legs, back and abdomen, conjunctivae, buccal cavity. These spots varied in size from a pin point to ¼" in diameter. In places there were showers of them.

Blood examination showed Hb. 60 per cent. Red blood cells 3,750,000. These varied slightly in size, stained very poorly, with large pale centers, and were round in shape. White blood cells 8,500. Polymorphonuclears 64 per cent. Mast cells .5. Eosinophiles .5 Granulars 65. Normal 73. Large Lymphocytes 21.5. Small Lymphocytes 5. Large Mononuclears 1. Transitionals 7.5. Non-granulars 35. Normal 27.

Malaria was negative. The important part of this blood examination was that the blood plates were completely absent. That is, prolonged search through the whole slide failed to reveal any. After treatment for a considerable period of time, the spots improved so much that only one or two scattered ones were left. At this time the blood plates reappeared in the blood in small numbers, but they have never been as abundant as in normal blood, and during a relapse they again disappeared. This clinical fact has been known for some time, but the explanation of it still lags behind the discovery of the fact.

DISEASES OF THE GLANDS.

CASE XXXVI:—Adenitis, cervical, acute.—E. C., male, 2 1/3 years of age. For the past 8 days has had a swelling at the left angle of the jaw. It is now three inches in diameter. The cervical glands below the swelling are enlarged, but not tender. No evidence of fluctuation. Throat slightly reddened T. 103.2. Blood examination showed leucocytosis, 29,000. Average for child of that age is 10,500.

Fluctuation developed later, and the left ear discharged. Recovery under surgical treatment.

This marked leucocytes showed suppuration was going on some days before fluctuation was made out.

CASE XXXVII:—Acute cervical adenitis.—J. R., male, 4 years. The parents stated that the boy had received a blow on the neck about three weeks ago and laid the present swelling to that. Examination showed that there was a bunch of very large glands at the angle of the jaw on the left and that the anterior cervical chain was also somewhat enlarged below this bunch. They were hard; skin not reddened over them, and there was no evidence of fluctuation. T. 102, P. 124. Blood examination showed, leucocytes, 7,000. Normal for a child of this age is 9,000.

There was nothing in throat. Recovery after six weeks under medical treatment without suppuration.

Here the leucocytes were not increased at all.

Comparing these two cases, we find that they were both in the same region, and presented almost identical clinical pictures, except for the blood, there being a marked leucocytosis in the first, and no leucocytosis in the second. The first went on to suppu-

ration, the second recovered without. Blood examination may therefore help us considerably in these cases in differentiating the ones that are going on to suppuration from those that are not.

DISEASES OF THE SKIN.

XXX VIII:—Erythema nodosum.—C. C., male, 15 years. For the past 3 days has had painful spots on his legs, and has had slight headache. Examination showed that over the anterior and external surface of the thighs and legs there were dark red areas varying in size from pin point to ½" in diameter, distinctly raised, indurated, firm, involving only the skin, and of a dark red color. As the spots faded they left a pigmented area in their place. They were exquisitely tender to the touch. They disappeared in the course of two weeks. Blood examination showed white blood cells 12,000. Differential count showed polymorphonuclears 75 per cent. Granular. Normal 73. Lymphocytes 24. Large Mononuclears 1. Non-granular 25. Normal 27.

This shows a slight leucocytosis, but very little variation in the differential count from the normal.

INFECTIOUS DISEASES.

CASE XXXIXMeasles.—A. F., 3 years, female. Has been coughing for the past four days. Vomiting last night. Measles eruption appeared this morning. No Koplik's spots. T. 104; lungs show sibilant and sonorous breathing, crepitant and subcrepitant rales. Blood examination shows Hb. 58 per cent. White blood cells 16,400. Differential count, polymorphonuclears 53.29 Eosinophiles .92. Granulars 53.21. Normal 50. Lymphocytes 40.37. Large Mononuclears 1.84. Transitionals 4.58. Non-granulars 46.79. Normal 50.

This blood shows a slight increase in the total number of w. b. c., but very little change in the relative proportions from the average normal.

CASE XL:—Mumps.—C. F., male, 2½ years. Complains of pain in his stomach and mother says he is not feeling well Examination shows herpes labialis. Two days after the blood examination was made mumps developed. Blood examination showed Hb. 75 per cent. Red blood cells showed moderate variation in size, were round in shape, and one nucleated red was seen in making the differential count. White blood cells 8,000. Polymorphonuclears 43.3. Granulars. Normal 48. Large Lymphocytes 52.5. Small Lymphocytes 4.1. Mononuclears .1. Non-granulars 56.7. Normal 52.

Here we see no increase in the total number of leucocytes, and a slight relative decrease in the granulars and a slight relative increase in the non-granulars.

CASE XLI:—Mumps.—E. S., female, 6 years. The patient had bilateral swelling of the parotid glands. The blood examination was made on the third day, when the right gland had been swollen and painful for about 12 hours, and showed Hb. 65 per cent. Red blood cells 4,500,000. White blood cells 7,600. Differential count showed polymorphonuclears 77 per cent. Mast cells 1. Granulars 78. Normal 73. Lymphocytes 22. Non-granulars. Normal 27.

This blood picture shows slight relative increase in the granulars and slight relative decrease in the non-granulars.

CASE XLII:—Congenital Syphilis.—G. M., male, 29 days. Vomits; stools are loose. Had snuffles when born, and now has an eruption on the soles of the feet, thighs and buttocks, which is macular and ham colored. Papular on the abdomen. Condylomata in the axillae and around the anus. Epitrochlear glands not palpable. Cervical, axillary and inguinal are. Spleen one finger below the free border of the ribs. Liver 1½ fingers below the free border of the ribs. The eruption and general appearance of the child typical of congenital syphilis.

Blood examination showed Hb. 78 per cent. White blood cells 21,000. Differential count showed, polymorphonuclears 31.17. Eosinophiles 1.53. Mast cells .57. Granulars 33.27. Normal 43. Lymphocytes 64.83. Large Mononuclears 1.90. Non-granulars 66.73. Normal 57.

This shows a marked leucocytosis with a relative decrease in the granulars, and a relative increase in the non-granulars.

CASE XLIII:—G. E., female, 1 year. Four months ago she had a "lump" at the right angle of the mouth. Two months after the appearance of the primary sore an eruption appeared. During this time the child has not gained any weight. She never had any snuffles. Examination shows that there is an ulcerative lesion at the right angle of the mouth. Submental glands palpable, but not greatly enlarged. The posterior cervical and inguinal are slightly enlarged. The left epitrochlear is also palpable. Liver and spleen are both easily palpable below the free border of the ribs. There is a papulomacular eruption over the buttocks, lower abdominal region upper part of thighs.

Examination of the blood shows that the red blood cells have moderate variation in size, and rather pale centers. White blood cells 10,000. Differential count of white blood cells shows polymorphonuclears 35.9. Granular. Normal 42. Lymphocytes 63.1. Large Mononuclears 1. Non-granular 64.1. Normal 58.

This shows as in the congenital case that the granulars are relatively diminished and the non-granulars are relatively increased.

CASE XLIV:—Acquired Syphilis.—J. E., 8 years, male. Two months ago a sore appeared on the lower lip which has refused to heal. For the past two weeks the mother has noticed a slight eruption on the body. Examination shows that the submental and submaxillary glands are enormously enlarged. The posterior cervical are palpable, the suboccipital are large as peas. Axillary, inguinal, both epitrochlears are enlarged. Liver and spleen not enlarged. On the trunk there is a maculo-papular eruption dark red in color. Blood examination shows white blood cells 12,500. Differential count, polymorphonuclears 37 per cent. Granulars. Normal 73. Lymphocytes 57.8. Large Mononuclears 2.6 Transitionals 2.6. Non-granulars 63. Normal 27.

This shows a slight leucocytosis and a marked relative diminution in granulars and a marked relative increase in non-granulars.

CASE XLV:—Chicken pox.L. C., male, 5 years. For the past two days has had "water" blisters on chest and back. Examination shows that the eruption of chicken pox is confined to the chest and back, and that there are no vesicles on the face or extremities. No temperature. Blood examination shows white blood cells 5,800. Differential count, polymorphonuclears 41.4. Granulars. Normal 66. Large Lymphocytes 34.7. Small Lymphocytes 3.3. Large Mononuclears 10.6. Transitionals 10. Non-granulars 58.6. Normal 34.

This shows no increase in the white blood cells, and a relative decrease in the granulars, and a relative increase in the non-granulars.

CASE XLVI:—Pulmonary Tuberculosis.—J. S., male 7, years. For the past two weeks has had anorexia, a slight cough and has slept restlessly. Examination showed that there was distinct infiltration of both apices of both lungs, no general glandular enlargement, and a temperature of 100 degrees. Hb. 65 per cent. Weight 46¼ lbs.

We were unable to control the hygiene of the child, as the mother would listen to no suggestions. After two weeks observation, Hb. 50 per cent, weight 45½ lbs. The boy was steadily losing ground, as shown by the haemoglobin and weight. He was therefore turned over to the tuberculosis clinic.

CASE XLVII:—Influenza:—F. M., male, 3 years. For the past two days has had fever, nausea, headache and general pains T. 101.4, white blood cells 9,600. Differential count, polymorphonuclears 80 per cent. Eosinophiles 1. Granulars 81. Normal 50 Lymphocytes 19. Non-granulars. Normal 50.

Although there was no leucocytosis in this particular case there was a marked increase relatively in the granulars, and a marked relative decrease in the non-granulars.

CASE XLVIII:—Malaria:—H. E., male 2 yrs. Has had fever every other day for the past week. He is pale, has herpes labialis, and the spleen is two fingers below the free border of the ribs.

Blood examination shows that the red blood cells have moderate variation in size, and stain only fairly. Malaria plasmodium is present. Probably the tetian. There is leukopenia, about 5,000. Differential count shows polymorphonuclears 19 per cent.. Eosinophiles 1. Granulars 20. Normal 45. Large Lymphocytes 57. Small Lymphocytes 2. Large Mononuclears 12 Transitionals 9. Non-granulars 80. Normal 55.

Here we have a hypo-leucocytosis with a marked

relative decrease in the granulars, and a marked relative increase in the non-granulars.

CASE XLIX:—Pertussis.—M. W., female, 5 years. Has had a cough for the past two weeks. Has been whopping for the past three days. White blood cells 15,400. Differential count, polymorphonuclears 39.8. Eosinophiles .8. Granulars 40.6. Normal 66. Large Lymphocytes 7.9. Small Lymphocytes 51.5. Non-granular 59.4. Normal 34.

This shows an increase in the number of leucocytes, and a marked relative decrease in the granulars, and a marked relative increase in the non-granulars. In this case the increase in the non-granulars was confined mainly to the small lymphocytes, which accords with the statement of a good many writers, but which I have been unable to confirm in anything but the minority of the cases.

CASE L:—Pertussis.—C. S., female, age 6 months. Has had a cough for about a month. Has been whooping, and vomiting after coughing for about ten days. White blood cells 12,600 Differential count, polymorphonuclears 60 per cent. Eosinophiles 1. Granulars 61. Normal 33. Large Lymphocytes 30. Small Lymphocytes 9. Non-granulars 39. Normal 67.

The number of the white blood cells is not quite up to the average in this case. There is also a marked relative increase in the granulars, and a marked relative decrease in the non-granulars. The most probable explanation of this is that there was possibly a small patch of pneumonia, central, which escaped examination.

CASE LI:—Pertussis.—C. S., male, 4 yrs. Has been coughing for about 3 weeks. For the past week has been whooping Differential count, polymorphonuclears 68 per cent. Mast cells 1. Granulars 69. Normal 56. Large Lymphocytes 27. Small Lymphocytes 3. Large Mononuclears 1. Non-granulars 31. Normal 44.

This case does not show the typical dierential count, where the non-granulars are increased above the normal.

CASE LII:—Pertussis.—J. D., male, 5 years. Has been whooping and coughing for 6 weeks. Has been vomiting after coughing for about 3 weeks. T. 99.2. Lungs show a few moist rales. The liver is palpable. Differential count shows, polymorphonuclears 47. Granulars. Normal 66. Lymphocytes 47. Large Mononuclears 1. Transitionals 6. Non-granulars 54. Normal 34.

This shows a typical change in the differential count. The granulars are diminished relatively and the non-granulars are relatively increased.

CASE LIII:—Pertussis.—G. S., female, 7 months. For the past three weeks the baby has had a cough, and coughing is frequently followed by vomiting. T. 100. There is an ulcer of the fraenum. Red blood cells are of equal size, and stain with pale centers, showing a slight degree of anaemia. White blood cells 19,700. Differential count, polymorphonuclears 31 per cent Normal 33. Lymphocytes 69. Normal 67.

Looking at it without any comparison you would naturally think that in this case there was a moderate leucocytosis, and a marked relative decrease in the polymorphonuclears and a marked relative increase in the lymphocytes, yet comparison with the normal for that age shows that there is only a slight change from the normal.

CASE LIV:—Pertussis.—G. D., female, 6 years. Has been coughing for the past month. Cough is paroxysmal, accompanied by suffusion of the face, and the child usually vomits after coughing. Whooping has never been marked. Blood examination shows red blood cells 3,200.000. Hb. 49 per cent. Red blood cells round in shape, have a moderate variation in size and pale centers. White blood cells 8,000. Differential count polymorphonucears 62.4 per cent. Eosinophiles 1.7. Mast cells 1.7. Granulars 64.5. Normal 73. Lymphocytes 18.8. Large Mononuclears 15.4. Non-granulars 34.2. Normal 27.

There was no leucocytosis in this case, but the granulars were relatively diminished, and the non-granulars were relatively increased.

CASE LV:—Pertussis.—G. L., female, 6 years. Has been coughing for past ten days. Whooping for two days. Examination of the lungs is negative. Blood examination shows that the red blood cells have a moderate variation in size, pale centers. White blood cells 15,000. Differential count, polymorphonuclears 28.9. Eosinophiles, 2.8. Granulars 31.7. Normal 73. Large Lymphocytes 59.5. Small Lymphocytes 8.8. Non-granulars 68.3. Normal 27.

This shows a slight leucocytosis. Also a marked relative decrease in the granulars, and a marked relative increase in the non-granulars.

CASE LVI:—Pertussis.—L. L., female, 5 years. Has been coughing for the past 10 days. Whooping for two days. Examination of the lungs showsmany coarse moist rales. Blood examination shows that the red blood cells vary in size and that they stain irregularly. White blood cells 18,500. Differential count, polymorphonuclears 35.4 per cent. Granulars. Normal 66 per cent. Large Lymphocytes 27.8. Small Lymphocytes 36.8 Non-granulars 64.6. Normal 34.

This case again shows a moderate leucocytosis with a marked relative decrease in the granulars and a marked relative increase in the non-granulars.

CASE LVII:—Rheumatism.—J. R., male, 8 years. Has had pain in the hip and ankle for the past three weeks. Had some fever at first. Examination shows that the right knee, ankle, and hip are tender to active and passive motion. T. 99.4. Examination of the blood shows Hb. 63 per cent. White blood cells 15,400. Differential count, polymorphnuclear 62.5 per cent. Eosinophiles 7. Mast cells .8 Granulars 70.3. Normal 73. Large Lymphocytes 16.4. Small Lymphocytes 8.6. Large Mononuclears 3.9. Transitionals .8. Non-granulars 29.7. Normal 27.

This blood shows a slight leucocytosis, but very little change in the relative proportions of the cells.

CASE LVIII:—Rheumatism.—F. N., male, 12 years. For the past three weeks has had pain and swelling of the joints. Both thighs, both knees, both ankles and both hands have been successively involved. T. 100. Left knee is now ¼" larger than the right. Heart shows a systolic murmur over the apex not transmitted. One month later this murmur had disappeared Blood examination showed Hb. 50 per cent. White blood cells 9,800. Differential count, polymorphonuclears 67 per cent. Eosinophiles 1. Granulars 68. Normal 73. Lymphocytes 29. Large Mononuclears 2. Transitionals 1. Non-granulars 32. Normal 27.

Although this was a moderately severe case clinically, the blood changes were very slight. Hardly enough to call them abnormal.

CASE LIX:—Suppurative Parotitis.—H. G., male, 22 months. For the lpast week there has been swelling at the left angle of the jaw which examination shows is confined to the parotid gland. The question then arose, was it mumps? The blood examination settled that and pointed to an infection. Two days later the child was brought back with distinct fluctuation over the parotid gland. which was incised and drained, and healed up kindly. Blood examination showed white blood cells 30,000. Differential count, polymorphonuclears 61.2 per cent. Granulars. Normal 45. Lymphocytes 34.5. Large Mononuclears 3.1. Transitionals 1.2. Non-granular 38.8. Normal 55.

With mumps uncomplicated there should be no leucocytosis. With mumps also there should be no increase in the granulars relatively and no relative decrease in the non-granulars. It was on these two points that mumps was decided against, and the subsequent course proved this to be correct.

CASE LX:—Multiple Sarcoma.—W. C., male, 3 years. 9 months ago mother noticed a swelling in the left side of the abdomen. Four months ago swelling of the left leg and arm began. Yesterday began to complain of pain in the face. Examination shows that the left malar bone, the left lower end of the humerus, the left side of the abdomen, and the left tibia just below the knee joint are the sites of tumors, which are undoubtedly sarcomatous. Urine shows no albumose. T. 100. Sibilant and sonorous breathing. Cervical, axillary and inguinal glands palpable but not markedly enlarged. Blood examination

shows Hb. 45 per cent. White blood cells 12,000. Differential count, polymorphonuclears 53.5 per cent. Eosinophiles 5.1. Mast cells .3. Myelocytes 1.3. Granulars 60.2. Normal 50. Lymphocytes 31.7. Small Lymphocytes 6.6. Transitionals 1.5. Non-granulars 39.8. Normal 50.

Here we have a slight increase in the total number of leucocytes, and a slight relative increase in the granulars, and a slight relative decrease in the non-granulars. The presence of myelocytes is the most strikingly abnormal thing about this blood.

CASE LXI:—Influenza.—R. K. Female, 2 years. For the past three days has had fever and a little cough. Examination shows that T. 103. Slight erythema over chest. Extremities and throat negative. Liver and spleen palpable. Blood examination shows Hb. 80 per cent. Anisocytosis. Good deal of irregularity in standing. 1 megaloblast. Malaria negative. White blood cells 10,400. Differential count, polymorphonuclears 61 per cent. Eosinophiles 1.1 per cent. Granulars 62.7. Normal 45 per cent. Large Lymphocytes 17.8. Small Lymphocytes 1.1. Large Mononuclears 16.7. Transitionals 1.7. Non-granulars 37.3. Normal 55 per cent.

This blood shows no leucocytosis, but a marked relative increase in the granulars, and a marked relative decrease in the non-granulars.

SUMMARY.

1. In gastroduodenitis, there is a leukopenia with a marked relative diminution in the granulars, and a marked relative increase in the non-granulars.

2. In catarrhal appendicitis, there is usually a slight leucocytosis, but the relative proportions of the granulars and non-granulars is not changed.

3. In oxyuris vermicularis, as with other intestinal parasites, there is an eosinophilia.

4. In retro-pharyngeal abscess there is marked leucocytosis, and a relative increase in the granulars and a relative decrease in the non-granulars.

5. In acute bronchitis, there may or may not be a leucocytosis. There is a relative decrease in the granulars, and a relative increase in the non-granulars.

6. In asthma there may or may not be a leucocytosis. There is a relative decrease in the granulars, and a relative increase in the non-granulars. There is an increase in the eosinophiles.

7. In pneumonia, broncho or lobar, there is a leucocytosis, with a relative increase of the granulars, and a relative decrease of the non-granulars.

8. In chorea the Hb. is markedly reduced. There is a slight increase in the white blood cells, and a relative decrease in the granulars, and relative increase in the non-granulars.

9. In epidemic cerebro-spinal meningitis there is marked leucocytosis and a relative increase in the granulars, and a relative decrease in the non-granulars.

10. In splenic anaemia of infancy the Hb. is markedly reduced. The red blood cells are reduced, but not to a degree corresponding with the Hb. There is poikilocytosis, and megalocytosis and microcytes, normoblasts and megaloblasts are present. There is an increase in the white blood cells, sometimes very marked. There is a relative diminution or no change in the granulars, and a relative increase or no relative change in the non-granulars, the eosinophiles are increased, and myelocytes are present.

11. In purpura hemorrhagica there is a reduction in Hb. and red blood cells, and the blood plates are so much reduced that in some cases prolonged search fails to reveal any. The granulars are relatively decreased, and the non-granulars are relatively increased.

12. In syphilis, congenital and acquired, there is an increase in the white blood cells, and a relative decrease in the granulars, and a relative increase in the non-granulars.

13. In influenza there is no increase in the white blood cells. There is a relative increase in the granulars and a relative decrease in the non-granulars.

14. In malaria there is a leukopenia. There is a decrease in the granulars, and an increase in the non-granulars. Plasmodium, of course.

15. In pertussis there is a leucocytosis, sometimes marked. There is a relative decrease in the granulars, and a relative increase in the non-granulars. With the development of pneumonia there is a reversal of the relationship, a relative increase in the granulars and a relative decrease in the non-granulars taking place.

16. Myelocytes and nucleated red blood cells are occasionally met with having no pathological significance, differing in this from adult blood, where their presence is always pathological.

The diseases in this series in which the diagnosis can be made from the blood alone, are:

1. Splenic anaemia of infancy.
2. Purpura hemorrhagica.
3. Malaria.
4. Pertussis.

In nearly every case, however, while not furnishing the diagnosis, the blood showed itself to be of help in differential diagnosis.

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THE ANNIHILATION OF TYPHOID FEVER.

BY A. L. BENEDICT, A.M., M.D., BUFFALO, N. Y.

THERE are several diseases whose names are familiar even to the laity, and whose descriptions are retained in standard works on practice, but which have become rare or unknown in areas of considerable extent. Among such may be mentioned small-pox, malaria, typhoid, relapsing fever and Asiatic cholera. Of all such disappearances, the writer would select that of leprosy from western Europe as most remarkable. This disease is so gradual in its development, so lacking in acute manifestations and by true natural immunity or accidental failure of factors essential to its transmission, so small a proportion of a population succumbs even where the disease is endemic, that its infectious character is not conspicuous. Yet, after being apparently firmly established among the peoples from whom we Americans are descended, this scourge was eradicated by persistent disinfection—largely by fire—and by segregation, and at a period when, in other respects, these ancestors of ours were so slightly advanced beyond a state of barbarism that they were signally lacking either in scientific insight or in executive ability in the interests of the people as a whole.

If these cruel, superstitious children of the dark ages could get rid of leprosy, we certainly need not feel discouraged at the beginning of an attack on the

remaining infectious diseases. It is important to bear in mind the very great contrast of different infections, not only in symptomatology and pathology, but in the various etiologic factors involved. Practically, we appreciate these etiologic differences well enough but at present, in contemplating any wholesale destruction of disease we are too prone to concentrate our attention on the point in common of a micro-organic cause and to hope for a simple and essentially identical means of prophylaxis based on a reaction of immunization.

Whether such a method of prophylaxis will eventually be placed on a practical basis, we need not now discuss. But let us be hard headed enough to recognize that however interesting and encouraging the research as to immunization has been, it has not as yet proved of much practical importance except with regard to the century-old discovery of vaccination against variola and, to a less degree of positiveness, with regard to antidiphtheritic serum.

Meantime, the theoretic hope of a simple, certain, and nearly identical method of prophylaxis applicable to a wide variety of infections ought not to blind us to the immediate practical possibility of attacking infections, one disease at a time, and in directing our attack at the special etiologic factors concerned in the transmission of each disease. Even if in ten years or a generation the necessary measures will appear as clumsy, slow and uncertain as the old-fashioned telegraph by means of levers whose signals were repeated from one observation station to another, we—or our successors—will have no cause for regret. In 1808, no one could have foretold the comparatively near advent of the electric telegraph, and, in 1908, it is premature to assume that the complicated hypotheses of immunity will be rendered simple, certain and practical soon enough to warrant a neglect of the means of prophylaxis already at our disposal.

It is scarcely necessary to say that different disease germs are passed from one test to another by very different means, while it would be interesting to study systematically the various laws and methods applying to the communicability of infections, such a study demands at least one separate article, on account of the complexity of the problem.

Suffice it to say that the prophylaxis of typhoid fever must, at present, involve details quite distinct from these pertaining to rabies, tetanus, tuberculosis, malaria, etc., so that although the agitation for efficient sanitation may well demand attention to all infections, and although the general executive power may be vested in a single organization, the preparatory study and the machinery must be limited to a single disease.

The following facts are pretty definitely established with regard to typhoid fever:

1. The typhoid germ depends for its existence solely on human tests. This statement does not mean that it is absolutely impossible to infect a monkey. It is even possible to recover the bacilli after feeding them to a lower animal and, if the dose has been massive, the animal may even show some febrile reaction and malaise. But, for sanitary considerations, we have no such complexity of problems as depend on the regular harboring of the disease by animals of commercial importance —as in the case of tuberculosis, trichinosis, equinia, tetanus, etc.; nor by these difficult to locate or control, as in the case of bubonic plague which affects rats and various other small vermin, nor can our efforts be restricted to necessary insect carriers of disease, as in the case of malaria, yellow fever, etc.

2. The typhoid bacillus is not indefinitely viable except as a human parasite. Ordinary natural vicissitudes destroy it in a few weeks at most. Thus even without embalming or cremation, corpses are not a source of danger under ordinary circumstances. Typhoid discharges entering a large lake with no appreciable current, are of no danger to communities forty miles away, perhaps not even to those ten miles distant, unless a storm creates a temporary current and prevents sedimentation. On the other hand, streams with an appreciable current are carriers of great importance. Typhoid discharges placed on market gardens may spread the disease, but contamination of manure used for hay and grain fields does not spread the disease unless immediately to the handlers of the manure.

Contaminated water when frozen has its content of typhoid colonies reduced to only a few per cent., and repeated freezings and thawings or prolonged exposure below the freezing point, rapidly destroys the bacilli. Thus ice—to which so much attention was directed only a few years ago—is rarely an important source of typhoid, and even in case of gross contamination, it would probably suffice to order the ice to be held for six months before placing it on the market.

There is no essential danger of food contamination, as in the case of tuberculosis, ecchinoccus disease, trichiniasis, etc. Of course any foodstuff may be contaminated accidentally, and care is necessary especially in regard to food and dishes used in the sick-room. But the only foodstuff at all likely to convey typhoid is milk, and almost every epidemic of this nature which has been investigated has been due to the grossest violation, not of recondite sanitary rules, but of ordinary principles of decency. For instance, typhoid foeces thrown onto manure piles have soiled the udders of milch cows, or an attendant on a patient has milked the cows or washed the pans without even washing his or her own hands, or else there has been a massive infection of a well or cistern on the milkman's premises.

3. The typhoid bacillus is not readily dispersed by the air or carried long distances by means practically beyond control. Given a camp on loose, sandy soil plus superficial deposition of infected foeces, and some dissemination of typhoid will occur by the wind. This occurred in the steel plant epidemic just outside of Buffalo two years ago. On the other hand, the very lack of sewers and the natural filtration through the soil—and the gradual melting of the snow prevented a sweeping of infectious matter into Lake Erie—prevented any appreciable contamination of the watter supply of the city itself. In the Spanish and Boer wars, there was considerable conveyance of infection by flies, mainly from open latrines and forbidden deposits of foeces on the surface to viands in the kitchens. The remedy

is too simple to require discussion except to call attention to the urgent need of developing in our people the realization that rational discipline and obedience to it are quite as desirable as freedom. But it is important to remember that there is no such difficulty in the case of controlling the spread of the exanthemata.

4. There is no practical degree of immunity to typhoid except that conveyed by a previous attack, in which case the immunity is nearly absolute. Possibly the few exceptions—which even clinically do not amount to more than one or two mille—may be explained by confusion with paratyphoid, colon infection, miliary tuberculosis. and ordinary mistakes in diagnosis.

This fact leads to very diverse corollaries. We may, for instance, suggest that in details for military sanitation and nursing involving danger of infection, immunes be selected. We may even ask whether a supervising nurse has the moral right to detail for continuous, exhausting duty in a typhoid pavilion, a young woman who has never had the disease. The same precautions also apply in the case of the private practitioner dependent largely on untrained "family" nursing.

Rather recently it has been demonstrated that virulent typhoid bacilli may breed indefinitely in persons who have recovered from typhoid. Here we have a difficult legal problem which need only be suggested here.

But another phase of the same problem is comparatively simple. Numerous serial observations have shown that just about 20 per cent. of typhoid convalescents eliminate typhoid bacilli in the urine. We have in hexamethylenamin a fairly efficient urinary antiseptic, though the results are not so prompt nor so infallible as it has been claimed. How many physicians make a routine practice of administering such drugs? And to take a little broader view of the same problem, how many health boards provide for the systematic examination of foeces and urine before allowing the discharge of a typhoid patient. I am not ignorant of the relative difficulty of these tests, but this is no excuse for not carrying them out as well as possible and, in short, of applying to typhoid precisely the same common-sense rule with regard to discharge from quarantine that prevails in the case of diphtheria.

In saying that the only immunity to typhoid is a previous attack, it should be stated that very young children and persons after middle life are relatively resistant. In the former cases the explanation may be gradually diminishing hereditary immunity or are due to maternal milk, but purely adventitious lack of exposure may be a sufficient explanation of the infrequency of such cases. In the matter of the gradual increase of resistance with increasing years, we may mention three possible explanations, none of which excludes the others: (a.) There may be a genuine immunization from repeated slight infections or implantations of bacilli without any true infection.

(b.) The gradual administration of lymphoid tissue in which the conspicuous localizations of the disease occur, may explain the relative immunity, even allowing for the fact that typhoid is not merely nor primarily a lesion of Peyer's patches.

(c.) Increasing caution in regard to all sorts of risks, including those involving infection.

There is a very general impression that resistance toward typhoid depends on the general health. While there is sound a priori reason to believe that hydrochloric acid secretion in the stomach may destroy or mitigate the virulence of the bacilli and that various other physiologic conditions may tend to prevent infection, I have been struck with the number of persons of delicate health who have resisted an apparent exposure and even more strongly with the number of typhoid patients who have been attacked while in the best of health.

Sir A. E. Wright's inoculation of killed typhoid bacilli seems statistically to produce a lessened susceptibility to typhoid or perhaps we should rather say that a mitigated disease has actually occurred. On the other hand, while in Paris, I found a unanimous scepticism as to the therapeutic value of the Chantemesse serum, in spite of the claim of the originator. In fact, every Parisian physician whom I asked about this seemed to regard it as a "plague," as one of them expressed it.

In reviewing the various etiologic factors governing the spread of typhoid, it will be seen that practically all come under the personal attention of the private physician, the medical officer of a camp or the executive medical head of a hospital or some special community, except the regulation of the water supply, including attention to ice, milk, etc.

We find that the risk from typhoid infection of water is inversely proportionate to the magnitude of the source—with allowance of course, for the suddenness and amount of infection. For instance, if a well or cistern becomes infected in the country, every member of the family may be infected with the disease; a single case occurring on the watershed of a reservoir supplying a community of a thousand or two, may infect 10—50% of the population. In a large city, on the other hand, even bad sanitary conditions seldom result in a simultaneous incidence amounting to more than 1 per cent of the population. This would seem to indicate that a single bacillus or, at most, a single colony of bacilli is adequate for an infection and also that the number of infections depends largely on the mathematic probability of the occurrence of a bacillus or colony in a ration of water. It indicates also that the infection of a water supply does not result in an even and universal distribution of bacilli through the water by reproduction. Of course we must remember that the infection of a large water supply, though less conspicuous, is more constant and that, therefore, the incidence at any given time is limited by the existence of a large proportion of persons already immunized.

Another matter for consideration is that a community that has enjoyed good water for a long time will develop a larger epidemic when contamination of the water does occur. This is equally true whether the local water supply suffers or whether what may be spoken of as a community removes to a place where the water supply or other factor favors infection. For instance, in Camp Alger during the Spanish war, several regiments coming from localities where sanitary conditions had been good, showed an incidence of typhoid amounting to 25—50 per cent. In some cases it was estimated that nearly every man who had not already had typhoid was infected in camp. In this connection, it is important to bear in mind what Lieut-Col. Victor C. Vaughan has emphasized: namely, that in any thousand average men of military age, we must expect at least one to be in the incubation stage of typhoid.

The necessary details of guarding a water supply are

so clear and have been so often discussed that I shall not discuss them, but shall simply point to the enormous reduction in typhoid, especially in European cities, that has occurred from the application of sand filtration or the use of properly guarded water sheds.

In Paris, in two hospitals, single cases of typhoid were pointed out to me with pride. Diabetes, cancer, aneurysm, exophthalmic goitre, ecchinococus cyst, etc., were shown as ordinary cases.

At the Petié, Dr. Lion presented a case with slight fever, coated tongue, backache, malaise, even the history of drinking well water. It looked to me like a plain case of early typhoid. He considered it "an embarrassment of the stomach," and explained that typhoid was so rare as to be scarcely considerable in the differential diagnosis. He showed me his statistics—59 cases in 5 years in a service of 300 beds kept constantly full. Here is the practical result of having a good water supply. There is a double system of pipes, "spring water" and "river water," the latter used only for street sprinkling, fires, commercial purposes, etc,, and all faucets of the latter accessible to the public are plainly labeled "not potable."

The prophylaxis of typhoid is feasible, a fact that can be accomplished because it has been accomplished simply by considering the conditions that must be met.

Another important factor is the principle of taking a case at a time. In Holland, some years ago, I asked Dr. Pel if malaria was not common. He replied that it was not. The marshes were in evidence and he said that there were many anopheles. The reason that he assigned for the rarity of malaria was that, for years, nearly every case had been promptly treated by quinine.

Practically every one of the fulminant epidemics of typhoid as at Ithaca and Butler and numerous others less noted but equally instructive, have been due to one case, out in the country, on the water shed. Less clearly but equally truly, every moderate incidence in a large community is due to the same cause. It is a case of dropping the foeces and urine of one or two patients into the mouths of one or two thousand well persons and having several hundred secondary cases.

Without in any sense excusing bad municipal and domestic sanitation, it is worth while remembering that there are only two infections which are essentially water-borne—cholera and typhoid. The former has not for two generations troubled the United States. Thus, if we were rid of typhoid, the problems of sewage disposition and water supply would be nearly reduced to economic and aesthetic considerations. No degree of contamination of water, ice, milk, vegetables, etc., that could not be recognized by the senses, would be important if it were not for typhoid.

Now, just as it is evident that one or a few typhoid bacilli may transmit the disease, it is equally plain that dilution of fomites (which consist mainly of foeces and urine), diminishes the practical infectivity by the law of chance and it is well established that the bacilli die spontaneously after a comparatively short extra-parasitic existence.

Without conceding the right of a municipality or other civic unit either to drop its excrement into the drinking water of another civic unit, or to supply its own citizens with water similarly contaminated, it should be clearly understood that the total typhoid mortality, except the small proportions ascribable to direct infection of attendants and to the discharges from cases in the few days in which diagnosis or even the realization of sickness by the patient is possible is directly ascribable to the physician and his assistants. The moral responsibility is almost exactly comparable to that of a man, who, without any personal grudge, discharges a gun from a dark window into a crowd.

This is a disagreeable statement, but one which can not be controverted. There is probably not a medical licentiate in the United States who is ignorant of the fact that typhoid discharges produce the disease, and that the disease is fatal in about 10 per cent. of all large series of cases. It is also susceptible of proof that water runs down hill. Very few physicians are ignorant of this fact. These two simple facts, taken in connection with well established details as to viability of typhoid bacilli, rapidity of currents in brooks, creeks and rivers and local data as to privy vaults, drains, water supplies and sewers, throw an increasing responsibility upon the doctor as we go up stream. Without considering the sanitary aspects of the location of vaults and wells, the convenient wickedness of building a privy in the country on a hill side near a brook, and the lazy short-sightedness of putting water pipes into a stream which is probably supplied in part by such privies, it should be remembered that a little trouble and 25 cents' worth of carbolic acid, bichlorid or various other disinfectants would have prevented the hundreds of deaths of the Butler and Ithaca epidemics.

Excepting the comparatively rare cases of typhoid that are introduced into sparsely settled communities, and those in cities that, by virtue of their low altitude or on account of precautions taken by subjacent communities which they would otherwise infect, every physician who allows typhoid excrement to follow natural descents should realize that he is killing men. With the exception of the circumstances stated, every case of typhoid in which the physician takes the same care to prevent the death of others that he does to save the life of his patient means the avoidance of a variable number of other sources of typhoid infection from zero up to a thousand or more. If the world could be free from typhoid for six weeks, it would probably remain so indefinitely, even without municipal and general governmental hygiene. If established, simple methods of disinfection of discharges were followed out in say, nine cases out of ten, there would be a rapid elimination of the incidence of this disease. The law of chance would then reduce the development of new cases so much more that, within a few years typhoid would become so much of a curiosity that nearly every case would receive careful consideration and the probabilities are that the disease would become extinct or nearly so, in a generation.

Infant Feeding.—Giving infants some form of food that will be retained and cause gain in weight is not necessarily good infant feeding (G. R. Pisek, Am. Jour. Obst. & Dis. Women and Child.). The food must contain enough proteids and mineral matter to repair waste and produce new tissue, and enough fat and carbohydrates to supply energy; except, of course, when the infant is sick or suffering from indigestion, when it is necessary to give temporarily a one-sided diet.

LOBAR PNEUMONIA: ITS VARIETIES, DIAGNOSIS, PROGNOSIS AND TREATMENT.

BY JOHN B. HUBER, A.M., M.D.

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I HAVE considered typical lobar pneumonia, such as is characterized by the initial chill; rapid rise of temperature, which then remains fairly constant up to the seventh day and then ends by crisis; insomnia; restlessness; vomiting; pain in the region affected; rusty sputum and dyspnoea. I have now to set forth such atypical varieties as are to be met with in practice; in reasoning upon these variations we must bear in mind that many of them are to be explained by the presence (in addition to the pneumococcus) of other bacteria.

1. Larval pneumonia. Such are abortive cases, enduring but two or three days, with the invasion not especially marked, the chill slight, the fever moderate, the physical signs obscure; here one may observe herpes just as in any acute fever.

2. Pneumonia peculiarly localized. There is apex pneumonia, which is marked by great prostration and delirium, and which may be mistaken for acute phthisis; the cough and expectoration may be slight. In central pneumonia all the symptoms may be present (though pain may not be marked) except those of pleurisy, with absence or incomplete development of physical signs of consolidation; the lesion is deep-seated, perhaps at the root of the lung; it is in such cases that the physical signs may not be well marked until even the eighth day. There may be double pneumonia, both lungs being involved; here the respiratory disturbance is very great. In migratory or creeping or wandering pneumonia different lobes are successively involved. In massive pneumonia (which is happily rare) the bronchi of the consolidated lobes are filled with fibrinous exudate, so that plugs of it are expelled; there is flatness, with absence of fremitus, breathing and voice sounds, making one think of pleurisy with effusion, the condition being, however, much more serious.

3. The pneumonia of chronic alcoholics will be seen much in hospital practice. The pneumonic symptoms will be greatly obscured by those of delirium tremens. The onset is not sharp, the fever is not so high, pain is not intense, dyspnoea, cough and sputum are not marked. These cases do very badly indeed.

4. The pneumonia of infants and children begins oftentimes with a convulsion, which may be followed by torpor and coma; in most cases the apex is involved; there are cerebral symptoms simulating meningitis; there is little cough; one seldom sees the sputum, because this is likely to be swallowed. The temperature rise is not abrupt, but gradual; and the fall is apt to be by lysis and not by crisis. In much of the pneumonia of infants the bronchi are intimately involved, the lesion being hardly separable from that of bronchopneumonia. The respiration may increase to 100 per minute.

5. The pneumonia of the aged runs an irregular course. The lung tissue involved may be small and the physical signs obscure; they may be absent or there may be a little dulness; there may be hyperresonance and senile changes in the ribs; a few subcrepitant rales and diminished intensity of breathing. The invasion is usually marked by chilliness or a distinct chill; there is more or less fever, not necessarily high; there is anorexia with perhaps nausea and vomiting; the pulse is rapid and feeble; there is oftentimes apathy or stupor, or mild delirium. The prostration is out of all proportion to the physical signs, as we would expect in the aged. The cough, expectoration and thoracic pain characteristic of lobar pneumonia may be absent or not especially marked. Even the breathing may remain as in health. The progress is very grave; and sometimes old people will die quite suddenly after what would seem only a moderate illness.

6. Terminal pneumonias supervene in such chronic diseases as pulmonary tuberculosis, endocarditis, nephritis, diabetes and arteriosclerosis. We have noted how it is, oddly enough, that people seldom die of the diseases of which they have suffered most in their lives. The end in such cases is often by pneumonia; and there may be as forerunners only a slight fever and increase in respiration, though the autopsy will reveal extensive involvement.

7. Secondary lobar pneumonia, an exudative inflammation involving one or more lobes, may supervene in patients who have sustained a traumatism (especially to the chest wall) or who are confined to bed after a surgical operation. "Ether pneumonia," indeed, is not unknown to surgeons; this is, however, more apt to be a bronchopneumonia, due probably to diminished resistive power to the germs already present in the pulmonary tissues. Secondary pneumonia is found also in those already suffering from memingitis, or other diseases of the encephalon and spinal cord, pleurisy, malaria, cardiac or renal lesions. Such patients may get up a venous (hypostatic) congestion of the dependent portions of the lung; and there may thus ensue either a true lobar pneumonia or a bronchopneumonia. On post-mortem we find irregular areas of both lungs involved; there is red and gray hepatization, with circumscribed congestion, but no complete consolidation of an entire lobe. The alveoli and bronchioles contain fibrin, pus and epithelium. Neither the symptoms nor the physical signs are marked; one is in danger of losing sight of them by reason of the pre-existing disease to which this pneumonia is secondary; chills, fever, rapid breathing, pain, cough and expectoration must be anticipated constantly in these cases.

8. Epidemic pneumonias appear in which the communicable nature of an infectious disease is quite pronounced. Predominating symptoms vary with different epidemics; and in these epidemics the cases are always severe. There has from time to time been a peculiar pneumonia accompanying epidemic influenza. There is an intense catarrhal bilateral inflammation of the larger bronchi, with profuse expectoration of mucus and perhaps of blood. The pathology is that of very marked congestion of the inflamed pulmonary area with comparatively little consolidation. The physical signs of consolidation are during life correspondingly less marked. There has been neither marked crises nor marked defervesence; but the fall in temperature has been gradual over a number of days, sometimes not reaching the normal until after the completion of resolution. In some cases resolution and return to normal temperature will not take place until after three or four weeks. We must here fear heart failure (from toxic action upon the myocardium) and venous con-

gestion of the lungs and other viscera. In many of these cases an empyema will result.

9. Toxic or "typhoid" pneumonia. These are the markedly infectious cases, in which the severity of the constitutional symptoms, which are really referable to the nervous system, has no direct or necessary relation to the extent of the lung tissue involved; the lesion may be in only a small area of one lobe. There may be jaundice. The systemic infection is great; we have really to deal with a pneumococcus septicemia. The patient behaves as if poisoned; there is marked prostration and rapid emaciation; the toxins are peculiarly virulent. Typhoid fever is not necessarily a factor; but this term is used because the appearances are like those seen in the third week of typhoid. The temperature is very high; the heart's action soon becomes rapid and feeble; the tongue is dry; the cerebral symptoms are marked; death is the rule.

10. Delayed Resolution and Organizing Pneumonia. Here resolution, instead of beginning within one or two days after defervescence, as in the ordinary cases, may be delayed for from one to ten weeks; nevertheless the inflammatory products may be absorbed. There may be persistence of physical signs with no other marked symptoms; or with such slight fever, rapid pulse and sweating as would lead us to fear the beginning of tuberculosis; or there may be persistent consolidation with death resulting. Or the exudate may be replaced by new connective tissue extending into it from the alveolar walls, with fibrous consolidation of the involved part of the lung and subsequent contraction; this is "organizing pneumonia."

DIAGNOSIS.

The differentiation of lobar pneumonia from other diseases is not difficult if we bear in mind the initial chill, the fever, the pain, cough, sputum, the crisis and the physical signs. Consider always carefully the three vital signs (temperature, pulse and respiration) and their interrelation. There is also a leucocytosis in lobar pneumonia, which may not be present in other diseases. Possibly an X-ray examination may be deemed necessary to the diagnosis; this would show the darkened area of consolidation, the diminished diaphragmatic excursion on the affected side and the enlarged right-heart in lobar pneumonia.

The diagnosis from broncho-pneumonia: The latter is usually preceded by a bronchitis or an acute infection; its fever is irregular and does not terminate by crisis; its physical signs are likely to be diffused over both lungs, and the evidences of consolidation are not so marked as in the lobar type of pneumonia.

The diagnosis from pleurisy with effusion: This may be puzzling in children. In pneumonia there is leucocytosis, higher temperature, pneumonic sputum and rather more rapid respiration; the aspirating needle introduced through an intercostal space should be conclusive. The X-ray may demonstrate in pleurisy with effusion a change in the level of the dark area on altering the patient's position; and also a displaced heart.

From empyema: As with pleurisy with effusion; in empyema the temperature may be hectic (septic).

From acute pulmonary tuberculosis: This is difficult unless repeated examinations of the sputum show the tubercle bacilli. But in acute tuberculosis there is no termination by crisis and the disease becomes progressively worse.

From acute bronchitis: By the physical signs, the pain and the sputum; the symptoms of lobar pneumonia are much the more severe. The X-ray will show no consodidation in bronchitis.

From meningitis, especially in children: In lobar pneumonia there will be more rapid respiration and the physical signs; in meningitis there will be Kering's sign, the exaggerated reflexes, the strabismus, and the evidence afforded by lumbar puncture. Sometimes the two diseases complement each other; and the severer meningitis may mask the lobar pneumonia. (Kering's sign is the inability to extend the leg passively whilst the thigh is flexed at right angles to the body.)

From typhoid fever: Until the third week of typhoid this is not difficult; then the absence of the widal reaction may be the only means of differentiating pneumonia from typhoid with secondary pulmonary symptoms.

From appendicitis: The pain of pneumonia is occasionally referred, especially by children, to the abdomen; locate McBurney's point. Otherwise the physical signs of each disease are characteristic.

When lobar pneumonia is a terminal affection it may be masked by the symptoms of the chronic diseases; malaria may simulate pneumonia; and in chronic alcoholism delirium tremens may mask the pneumonia. In these cases we should be sure to examine for the pulmonary lesion.

PROGNOSIS.

The mortality is from twelve to forty per cent.; it averages higher in hospitals than in private practice, probably because many cases do not enter hospital until they are advanced in the disease. In epidemics the mortality has been as high as fifty per cent.; here influenza is oftentimes a complication. Infants below one year have a high mortality; children do remarkably well; in the aged the mortality is from sixty to eighty per cent. All things considered, lobar pneumonia is the most fatal of all acute diseases; its death rate has at times been higher than that of tuberculosis. But whilst the pneumonia mortality is higher in infants and after the fiftieth year, tuberculosis reaps its harvest mainly among those from adolescence to the fiftieth year.

The prognosis of lobar pneumonia is unfavorable for the negro; the death rate in the Southern States is considered to be higher than in the North. Chronic alcoholics practically never recover. The debilitated, the starved, the poverty-stricken, those whose habits have been bad and unhygienic do not do well. Sufferers from pre-existing cardiac or renal disease, tuberculosis, diabetes, cancer, and those whose organs are degenerated do badly. Extensive bronchitis is an unfortunate complication; as is also pericarditis; endocarditis is most grave. Those with meningitis almost invariably die—fortunately, for the encephalic involvement is such that life would be melancholy indeed if such a complication were recovered from. Severe pneumococcus toxemia (as evidenced by high fever, delirium, extreme prostration and a full but compressible, followed by a feeble pulse) is unfavorable, in the mixed infection with the streptococcus we would have a hectic temperature, with a fatal termination. This toxemia may affect the vasomotor system or the myocardium. Great mechanical interference with respiration, as in the involvement of large areas or in double pneumonia, is unfavorable; as is also obstruction to the circulation. An overworked right heart is likely to result in sudden heart failure from acute dilatation, with death; this we

have constantly to fear after the third day, and we therefore watch for cyanosis and feeble second sound over the pulmonary valve. Up to the time of the crisis we must fear a fatal termination from oedema of the lungs. The absence or the slight development of leucocytosis is an unfavorable circumstance, as this indicates a low antitoxic or resisting power on the patient's part. Other things to consider in giving a prognosis are: the severity of the type or variety of the infection; whether the infection be a mixed one; the individual resistance in each case, which would be greater in the robust and in those who have lived healthy lives. Much albumen in the urine is unfortunate, but not necessarily bad; abscess or gangrene of the lung are generally fatal sequelae.

PROPHYLAXIS.

The prophylaxis of lobar pneumonia should be very much as in tuberculosis. We disinfect or otherwise destroy the sputum, as also any vomit and the patient's discharges. Antiseptic mouth washes should be used as much as is possible by the patient; and the attendants should keep their own mouths and throats very clean with mouth washes and gargles and should wash their hands frequently in disinfectants (1-2,000 bichloride of mercury). We should disinfect at least the patient's room after his recovery or death. It were well indeed to disinfect the whole house, especially if there have been several cases in the family, or in epidemic pneumonia. In any event we should cleanse such rooms with moist antiseptics rather than by dusting and sweeping.

Those who have no occasion should not come in contact with pneumonia patients; in hospitals these cases had best be isolated. The susceptible, by reason of predisposing factors to disease, should not be unnecessarily exposed to pneumococcus infection. Expectoration in public places should be prohibited. There is probably a great deal of pneumococcus infection in the dust-laden atmosphere in large cities. It is likely that methods of immunization against pneumonia by means of vaccination will be perfected; this is not yet an established procedure.

TREATMENT.

The treatment of lobar pneumonia pursued in the Bellevue, New York, Roosevelt and Presbyterian Hospitals in New York City was thus epitomized by the late Dr. H. P. Loomis:

Upon admission the patient is usually given calomel in small repeated doses followed by a saline the next morning. Local applications to the chest are generally restricted to cases in which intense pain and distress are felt; such applications are not made as a routine practice. An exclusive milk diet, plain or modified, is adopted during the height of the disease. A temperature of even 104 degrees is not regarded as a necessary indication for special treatment unless nervous symptoms (marked restlessness or delirium) accompany the fever. At the Presbyterian, when the temperature exceeds 104 degrees, cold packs are applied to the chest anteriorly; in the New York alcohol sponging is resorted to and, failing that, the cold pack; at Roosevelt alcoholic sponges or cold packs are done; at Bellevue sponging with tepid water (80 to 85 degrees). Only in the New York and the Presbyterian are tub baths given; nor even then except in cases of toxemic pyrexia or in alcoholics with marked nervous symptoms. Codein is given to control cough (1-4 to one grain every four hours); sometimes heroin (gr. 1-12), and perhaps morphine. Trional and sulfonal are given for insomnia. Pulmonary oedema is treated by hypodermic injections of adrenalin; also by atropine, cupping and stimulation. The use of oxygen is restricted to cases of cyanosis and dyspnoea. The three cardiac stimulants are alcohol, strychnine and digitalis; of these alcohol is the most used and the most relied upon. Digitalis is used in Roosevelt. The indications for these stimulants naturally vary in different cases. Nitroglycerine is only occasionally used. In Roosevelt rectal saline injections are given especially for alcoholics and when nutrition is failing, eight ounces of a normal salt solution are introduced every four hours through a funnel attached to the end of a catheter; these injections are well retained and seem to be of decided benefit.

In addition to this excellent resumé the following considerations are to be emphasized:

Elimination is a fundamental principle here, as in therapeusis generally. We do what we can to rid the organism of the toxins generated in pneumonia; and this by means of the emunctories—the bowels, the kidneys and the skin. To this end we employ calomel and the salines; several times during the course of the disease epsom salts are appropriate. As diuretics we give the acetate, the bicarbonate or the citrate of potash; as diaphoretics the solution ammonium acetate and the spirits nitrous ether.

We constantly watch the heart and the circulation; there is truth in the statement that pneumonia usually (but not always) kills through the heart. Hence we watch for a diminished first sound (at the apex), and a feeble second sound over the pulmonary valve. We frequently, and with care, feel the pulse: we thus learn not only the number of beats, but we detect also increased (high) tension, or diminished (low) tension; we appreciate the pulse rhythm (its intermittence or its irregularity); the quality of the pulse—whether it be hard (relatively incompressible) or soft (compressible); and dichrotism of the pulse, which may supervene later in pneumonia when the organism has become excessively exhausted by the disease. A careful watch of the pulse is obviously essential to rational medication; especially is one guided by this means in cardiac stimulation. We aim for a pulse of 90—100, without increased tension, soft, of good quality and strength (Delafield). Immediately we detect cardiac weakness we give, at first in small doses, and repeating frequently as we find them indicated, alcohol, strychnine, digitalis, strophanthus, convallaria, atropine, caffein and nitroglycerine. My distinguished colleague, Dr. Reilly,* relies much on digitalis in lobar pneumonia; and he well observes that the use of this drug, to be effective, must be begun early, since at least twenty-four hours are required for its effect to be appreciated. It is very essential for digitalis to be reliably and freshly prepared; we give the fluid extract, M., iij, q. 3 hours, increasing if the pulse becomes markedly rapid. The freshly made infusion of digitalis is an excellent form of administration, though not agreeable in taste. A very good combination, both for the circulation and for diuresis is the "A B C diuretic" (℞ acetate, bicarbonate and citrate of potash, aa. gr. xv; infus. digitalis, q.s. ad. ℥ij; one dose). Another is that of Delafield: Iodide of

*T. F. Reilly: Digitalis in Pneumonia; J. A. M. A., Dec. 26, 1909.

potash, gr. v.; Fl. ext. digitalis, Mj; Fl. ext. convallaria, M. xx; one dose every 3 hours. Or this: ℞, Ext. digitalis, gr. ¼; potassium nitrate, gr. iij; squill, gr. i; ft. capsule; aa. one q. 3 hours. A hot poultice of digitalis leaves applied over the region of the kidneys may also be found effective. For the hard, incompressible, full and bounding pulse indicative of venous congestion and circulatory resistance, we shall need nitroglycerin in doses of from 1-50 to 1-25 of a grain, alone or in combination with digitalis.

In many cases (especially when the dry tongue is marked) we shall find alcohol useful; in the cases complicated by chronic alcoholism we need have no hope whatever unless we give this stimulant freely. When we give alcohol in lobar pneumonia, we begin with half an ounce of whiskey or brandy every three hours, and increase as the conditions require. We do not, however, use alcohol indiscriminately, or in every case; here, as elsewhere in therapeusis, we should know the reason for what we are doing.

The invasion of lobar pneumonia is a great shock to the organism. Therefore one or two initial doses of morphine (gr. 1/8 to 1/4) are decidedly indicated; by this means we relieve the dreadful pain and assure rest and comparative comfort. For the pain hot or cold applications to the chest are also indicated. We are chary of the use of morphine when diffused bronchitis is a marked concomitant of the pneumonia; for the morphine dries up the bronchial secretions and retards their expulsion from the tubes. The lack of sleep is most weakening and distressing in lobar pneumonia; we therefore, induce sleep, or at least relieve the restlessness and perhaps delirium by mans of trional, sulfonal, the bromides, codein. In inducing sleep, however, we guard against the possibility of coma or oedema; we therefore give hypnotics in small doses and change the patient's position from time to time. Otherwise we disturb the patient as little as possible.

If oxygen is to be used, the patient must have it earlier than it is generally employed; there will then be not so much occasion for the statement that "the appearance of the oxygen tank indicates the end of the case." This gas is effective if employed before dyspnoea and cyanosis (as indicated by the dusky skin, the blue lips and the prominent veins) are marked. The gas is breathed until these symptoms are relieved, usually for ten minutes at a time, with quarter-hourly intervals. Here we use also atropine (gr. 1-100), strychnine (gr. 1-30), and digitalis (Mx of the tincture)—separately or in combination.

Venesection is little in fashion nowadays; and this largely by reason of the just opprobrium invited by in discriminate and occasionless blood letting in the past. But when blood letting is indicated there is no more effective practice; in serious cases lives may by this means be saved. What are the indications? We may rightly venesect early in pneumonia, in sthenic cases, in full-blooded individuals, such as policemen; and at any time in the disease we may let blood when there are hyperpyrexia, high tension, a pulse of 120 or more, bad breathing, engorged and distended veins, a distended and overworked right heart, and evidence of distended pulmonary arteries. By venesection we combat excellently this grave condition; we secure "mechanical disintoxication" by removing blood laden with toxic material; we relieve the right heart and the clogged veins and lung tissue; we restore the circulatory balance; and coincidently we mitigate the high temperature, the cerebral congestion, the pain and the dyspnoea. Venesection is done as follows: The parts and the instruments used are rendered thoroughly aseptic (septic phlebitis is the only thing we have to fear from phlebotomy); we make a few moderately firm turns of a roller bandage around the middle of the arm; fix the median cephalic vein at the bend of the elbow with the left thumb, and with a lancet or a sharp pointed bistonny open this vein obliquely to its long axis (we prefer not to open the median cephalic vein for fear of wounding the subjacent brachial artery). The blood flows freely; the amount abstracted is governed by the pulse; from a pint to twenty ounces may be removed. We then apply a pad of gauze and a figure-of-8 bandage over all. The more rapidly the blood is abstracted the less will be required to lower the force of the circulation. The semi-reclining position were best for the patient during this procedure.

The temperature of the sick room in lobar pneumonia is set at 65 degrees, and 70 degrees for children; but the principal point here is to have it well ventilated. We do not fear cold air for the pneumonia patient; this phase of the treatment has indeed become quite revolutionized. It is a truly inspiring spectacle, that of the snow-surrounded beds, in the open air, on the roof of the clinic of the Presbyterian Hospital in New York City, occupied by pneumonia patients; whilst nurses, gloved, wearing overshoes and clad in winter garments are in attendance. Of course under such circumstances the bedding must be adequately warm; the patient may also wear a "helmet" of wool, which comes down over the neck and clavicles. After the crisis the patient must be taken indoors at the room-temperature indicated.

Hydrotherapy is a most effective measure in lobar pneumonia, as in acute infections generally. By this means we relieve the nervous symptoms, help to restore the vaso-motor tone, reduce the temperature and improve the heart action.

Besides the procedures already stated, we note that the tub is rarely required in lobar pneumonia. Sponging is done for ten minutes at a time. If we use the bath we begin with a temperature of 90 degrees and gradually get down to 80 degrees. There must be no exertion on the part of the patient; he is held and supported while in the bath and the skin is gently rubbed. Only tepid baths will do for the aged, the very young and the very weak.

The diet, up to the crisis, is mainly fluid—milk for the most part; broths and meat juices, eggs and light cereals; plenty of water, plain or carbonated, to drink, cracked ice to swallow; and lemonade occasionally (but not at the same time with milk). As pneumonia is of short duration by comparison with such diseases as typhoid fever, we certainly have little occasion for solid food until the defervescence. Food had best be given in a cup or through a tube; the head should not be raised.

We manage the complications of pneumonia as when they are independent affections; but we employ depleting measures with caution. Aspiration in a concomitant pleurisy is not well borne, and had best be postponed, if possible, until after the crisis.

When the blood pressure is very low and cardiac failure is feared, saline injections may be given subcu-

taneously or intravenously. We may inject from one to two pints (sodium chloride zi—Oi tepid water), allowing the fluid to flow under the skin from an aseptic fountain syringe; and this hypodermoclysis may be repeated if necessary after 8 to 12 hours. A pneumococcus serum is hoped for to be used in the treatment of lobar pneumonia; but this has not yet been perfected. The idea of serum therapy in this disease is logical; for it is a self-limiting disease, an infection, the crisis representing the culmination of the struggle between the patient's antitoxic powers (which a proper serum would reinforce) and the essential bacterium.

Good nursing is most essential in lobar pneumonia; and a reliable and conscientious nurse, practiced in the observation of symptoms, will save the physician many an anxious moment. The pneumonia patient needs constant watching; at any time he may get up a delirium which may prove disastrous; or an oedema or a heart failure which, if not at once met, will prove fatal.

Obviously there is at present no specific, no routine treatment in pneumonia. We cannot plan a treatment which will apply in all cases; to this end, however, the hospital procedures here outlined are sufficiently definite to form the basis of action. We must individualize in lobar pneumonia; much judgment is required; there is plenty of scope for wise action in this disease; we should here prescribe nothing without some good reason. Simple cases do not require much interference; symptomatic procedures may be all that are necessary; but we must be constantly on the watch, for simple cases may turn out quite seriously; we may have collapse and death even in convalescence. In addition to the measures stated the following have been used: Jackets of flannel (or of cotton covered with oiled silk) are made, easily to be opened for the physician's examination. Dry cupping is sometimes done; poultices are made (but rarely nowadays); and sinapisms are employed as counter-irritants. Children do better with hot than with cold applications to the chest. Among drugs, quinine is preferred by some physicians; ammonium carbonate (gr. v—x); guiaicol carbonate (gr. xx, an expensive drug); Dover's powder, Clark's powder, and the salicylates. Aconite, veratrum viride, the coal-tar products and pilocarpine, if used at all, should be watched for their effects with the greatest care; they may do much harm.

Tuberculous Lymph Glands in Children.—F. M. Pottenger (Pediatrics) believes these to be non-surgical. Such as are usually removed are those which drain the mouth, nose and adjoining structures. And the operation is done under the impression that the tuberculous focus is being removed. But these visible glands are only part of the offenders. Very rarely can the entire focus be removed; the only thing accomplished by such a procedure is to remove the glands which are visible whilst others equally dangerous are left behind to menace the patient. Moreover, the statistics of operation are anything but satisfactory, for there is a local recurrence in about twenty per cent. of cases and an extension to other organs in about twenty-five per cent. The danger of operation in tuberculous tissue is great; vessels are opened and the bacilli are scattered through the blood stream to infect other foci.

ACUTE NERVOUS SYMPTOMS FROM LA GRIPPE.

BY T. H. EVANS, M.D., FREEPORT, N. Y.
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IN every epidemic of grippe we discover cases showing a nervous reaction. Some writers have reported cases of toxemic headache. If the fever goes high enough, in young subjects there may be delirium.

The chief symptom, that of prostration, may assume single importance. There may be no cough, and little or no gastro-intestinal symptoms. However, if we question closely there is usually a history of some sore throat or pulmonary catarrh, some slight looseness of the bowels, or constipation, and the tongue is coated.

Beside the marked prostration, pain is present. This may be so localized as to suggest neuritis, or rheumatic affections. The thermometer records an elevation of temperature, although clinicians remember genuine cases of influenza with a beginning, and even course, of subnormal temperature.

Nervous symptoms may be divided:

1. Prostration.
2. Pain.
3. Hyperesthesia.
4. Paresthesia.
5. Lessened motor function.
6. Relative inhibition of functions of sympathetic nerves.
7. Slight psychic reactions, as in neurotic individuals, who become inclined to suspicions or disorders of memory or imagination.
8. Insomnia.

All of these conditions yield, if promptly treated.

We attend to the emunctories. The bowels, kidneys, and skin, each receive proper medicines to relieve congestion of waste products and the strain and irritation incident to the altered metabolism of the morbid process. The following in uncomplicated cases may be used:

℞ Hydrarg chlorid mitis	gm. 0.075
Salol	gm. 2.500
Acetanilid	gm. 1.500
Caroid	gm. 1.500
Potass. nitrit	gm. 0.050
Carbon lignis	gm. 0.500

M. Pone in capsulas, No. xij.
Sig. One every two hours.

When the next visit is made, the following is to be used, if purgation is effected:

℞ Strychnin sulfat	0.01
Salol	1.50
Acetanilid	1.50

M. Pone in capsulas, No. xvj.
Sig. One each hour.

Instead of salol, a very efficient drug is the salicylate of cinchonidine. Acetanilid may be omitted from the second formula, and the pyrexia combatted by the salol alone. Potassium nitrite relieves the heart excellently well.

Some writers advise alcohol. Sherry or whiskey is permissible. In strychnin and the nitrites, however, we have splendid supportants. Digitalin is less valuable, except when some complication is present. Diuresis may be obtained by free use of alkaline waters, or by the use of pure distilled water.

Milk, buttermilk, kumyss, and skim-milk are avail-

able. Always apportion the drink to be taken, so that it is employed with regularity, or not forgotten entirely.

When some albuminuria is present avoid eggs, meat, peas, and beans. Nephritis as well as myocarditis are frequently encountered, especially the latter in children, and the former in the old.

Rest, confinement to one room, indeed, rest in bed with an absolute milk diet, or milk toast and soft boiled eggs, will accomplish very much.

Nervous cases do well with some cheerful companion as nurse, or may require silence and comparative absence of light.

Feed at intervals of two hours during the early and febrile part of the attack. Give the medicine at this time, and allow the patient to sleep, or rest, between. If the recipes given above are used, any capsules missed during short sleep could be given with the next dose, unless more than six hours have elapsed.

For insomnia, use the hot, wet pack and purge. Also give the following:

℞ Strontii bromid .....gm. 5.00
Elixir calisayae .....gm. 30.00
Ess. pepsin .....gm. 30.00
M. Sig. Shake well. One or two teaspoonsful in water each hour.

For cases in which pain is a distinguishing symptom, the employment of Dover powder is magical, especially when associated with laxatives, and the exhibition of salol or the salicylates.

If cough is present something like this:

℞ Ammonii chlorid .....gm. 2.50
Potass. bromid .....gm. 1.50
Syr. prun. Virginian .....gm. 35.00
Glycerin .....gm. 5.00
Mist. Glycyrrhiz. comp., q. s. ad....gm. 100.00
M. Sig. For cough. One teaspoonful every 2 hours.
Or,

℞ Ammonii chlorid .....gm. 3.50
Tr. opii camphorat .....gm. 10.00
Glycerin .....gm. 10.00
Syr. pini alb., q. s. ad.....gm. 100.00
M. Sig. A small teaspoonful (in water) every 2 hours.
Or,

℞ Ammonii chlorid .....gm. 2.50
Syr. pini. alb. .....gm. 20.00
Syr. prun. Virginian .....gm. 20.00
Syr. limonis .....gm. 20.00
Glycerin .....gm. 5.00
Tr. opii camphorat .....gm. 5.00
Aquæ, q. s. ad .....gm. 100.00
M. Sig. One teaspoonful every 2 hours.

When some gastrointestinal difficulty causing nervous reflexes arises, administer small doses of Epsom salt:

℞ Magnesii sulfat .....gm. 40.00
Syr. limonis .....gm. 40.00
Tr. opii deodorat. gtt. ij.....
Glycerin .....gm. 5.00
Aquæ, q. s. ad. .....gm. 120.00
M. Sig. Shake well.

One or two tablespoonsful in a glass of cool water every hour until purgation is freely established.

In some cases it is well to give one grain of calomel before initiating the saline. In the above prescription the Epsom salt should be dissolved in hot water, and to this solution add the lemon syrup and glycerin and deodorized tincture of opium, the last named obviating a tendency to griping. Then add cold water to make the 120 grams.

Hot water bottles should be ordered to maintain equable body heat. The abdomen may be anointed with warm olive oil, or some iodine preparation in solution in a petroleum liquid which may be applied to painful areas.

Diet becomes full as soon as the emunctories are at work. The nervous symptoms, especially those of tremor or prostration are best managed by rest in bed and full diet.

Strychnin is invaluable, but some cases of an epileptoid nature do not do well with it. These cases are met with in individuals of poor attentive power and restless, undisciplined mental powers. Ignatia Amara may be tried. But a full diet and something like this will fulfill all the indications:

℞ Strontii bromid .....gm. 1.00
Elixir calisayæ .....gm. 35.00
Elixir sodii et calcii lactophosphat...gm. 35.00
Ess. pepsin, q. s. ad .....gm. 30.00
M. Sig. One teaspoonful in water every 2 hours.
Or,

℞ Oleoresinae capsici gtt. ij.....
Ext. gentian .....gm. 1.00
Pepsin .....gm. 1.00
Ext. valerian .....gm. 1.00
M. Ft. mass. div. in pil. No. xvj.
Sig. One every 3 hours.

When anemia is present one may employ:

℞ Elixir sodii et calcii lactophosphat..gm. 20.00
Liq. ferri peptonati cum manganes..gm. 40.00
Ess. pepsin, q. s. ad .....gm. 100.00
M. Sig. Two teaspoonsful in water every 4 or 5 hours.

The nervous after effects of influenza are many. Genuine psychoses occur. Attack any defective metabolism. Exercise every resource to feed up the patient.

Change of scene, sea air, salt baths and milk diet.

1. Do not be deceived in the diagnosis by lack of fever or absence of pulmonary symptoms.

2. Do not hesitate to purge.

3. Do not be cautious in feeding, after the bowels and skin and kidneys are cleared.

4. Try to keep the patient in an equable temperature, and at rest in bed, during the attack.

5. Strychnin and milk are anchors for the ship in storm.

6. Fresh green vegetables, such as lettuce, parsley, celery, string-beans, water-cress, spinach, dandelion (taraxacum), Swiss chard, brussels sprouts, carrots, beet-tops, asparagus, cauliflower, etc., and oysters, clams, mussels, in soup or broth may be encouraged for the patient's good.

The heavy meats, pastry and rich cakes, excepting sponge cake, should be withheld. Allow fruit ices, and ice cream.

Give oranges, lemons, limes, stewed pears, or baked apples.

Gelatine is excellent for those whose blood is thin. Some of the egg dishes known as egg custard, floating island, and blanc mange are useful.

The appetite of sick or convalescent patients with

grippe is very unsettled. Feed regularly, often, and in moderate but tasteful forms.

Remember that nervous prostration and grippe have been confused with the onset of tuberculosis.

The reinforced diet is suitable in any event.

Nervous symptoms due to influenzal toxemia or depression disappear at once with elimination and repair under way. Continue for a fair interval after recovery to give the patient supporting diet and tonics.

If any psychosis develops institute a thorough neurologic and psychiatric examination. Paresis begins insidiously, at times with illness of the type of grippe or pneumonia.

Guard the lymph-vascular system, heart, kidneys and tubular portions. Always be on the lookout for albuminuria.

Arteriosclerosis may result, or be coincident. Serious centric lesion may develop in the nervous system unless the state of blood pressure and the quantity and quality of the blood be studied.

It would be well if transient psychoses due to autointoxications such as of influenza could be treated in institutions other than the dreaded asylum.

Post influenzal palsies are uncommon, but occur. Some slight motor weaknesses or some sensory disturbances of common or special sense may be often overlooked.

Electrical treatment is useful, although this is less valuable if general measures are disregarded.

TUBERCULOSIS OF THE URETER.

BY BYRON ROBINSON, B.S., M.D., CHICAGO, ILL.,
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THE ureter is a conduit which extends from the kidney (gland) to the bladder (urinary reservoir). The ureter is a duct capped by the renal gland which pours its contents into its calyces through six or eight apertures—the apices of the renal pyramids. The renal pyramidal apex possesses some 40 apertures and was known to ancient anatomists as the cribrum benedictum or blessed sieve. In autopsies we observe that Koch's tubercles may be frequently noted in the renal parenchyma—in the cortex and along the base and side of the renal pyramid. The tubercle bacillus was conducted to the kidney by the blood current, lymph stream or through the renal pyramidal apex. It may be stated that primary tuberculosis of the ureter is rare, it being practically secondary to tuberculosis of the renal parenchyma or bladder.

Tubercular ureteritis may not occur though the renal tuberculosis be advanced or vesical tuberculosis exist. Also the ureter may be tubercular without tubercular envolvement of kidney or bladder. However, the rule is tuberculosis occurs: (1), in the kidney; (2), in the ureter (calyces and pelvis); (3), bladder. Tubercular ureteritis is a grave disease, because the tubercle bacillus that infects one ureter may also infect the other, and also the removal of one ureter does not immunize the other. It is always possible that tubercular ureteritis is bilateral. I have observed unilateral ureteral tuberculosis. However, it is probable that ureteral tuberculosis begins as a unilateral disease. Literature indicates that there is more tubercular ureteritis in women than men; however, authors vary considerably in statistics. The average of five distinguished urologic authors practically gave twice as many women as men afflicted. Gonorrhoea plays a role. Ureteral tuberculosis is a disease of middle life (20—40). It appears to attack the right ureter the most frequently (nephroptosia). Tubercular ureteritis is a serious and prevalent disease. In tubercular ureteritis, the mucous membrane ulcerates, the ureteral wall (musculature and pericellular coat) becomes affected, infiltrated, rigid. As general proof the tubercular ureteritis is a secondary disease it may be noted at autopsy and during renal operation that the proximal end of the ureter (calyces and pelvis) is first affected. Many problems presented in tubercular ureteritis are still unsolved. The definitive fields of medicine and surgery in tubercular ureteritis are not marked by settled boundaries. Views of special labors are not in accord as to therapy. Further labors are required. A characteristic of tubercular ureteritis is rigidity of the ureter, that resembles a lead pencil, a stiff irregular calibered cylinder. What induces this chronic, but progressive infiltrating ureteritis? It must be a form of mixed infection which accompanies the tubercle bacillus—which penetrates the ureteral muscularis and peri-ureteral cellular tissue inducing cellulitis. The thickening in the ureteral coats fortifies the ureter against perforation. The rigidity of the ureter in tubercular ureteritis with its consequent cicatricial contractions and projections explains the dislocations of the distal ureteral orifice observed during cystoscopy. A rigid tubercular ureter performs its peristalsis under difficulties. A peculiar phenomenon may be observed in tubercular ureteritis which refers to the irregular dilatation of the calyces, pelvis, or ureter proper. Different segments of the tubercular ureter attain remarkable diameters, because partially obstructed ureters obtain greater caliber than completely obstructed ureters. Completely obstructed ureters distend until the urinal pressure becomes equal to the blood pressure whence matters become stationary. The tubercular detritis frequently partially obstructs the ureter and marked irregular dilatation occurs in different segments of the ureter.

The temperature doubtless is suggestive so far as its morning remission and evening exacerbation. However, acute suppuration, pyoureteritis may obscure the picture—i. e., mixed infection may occur.

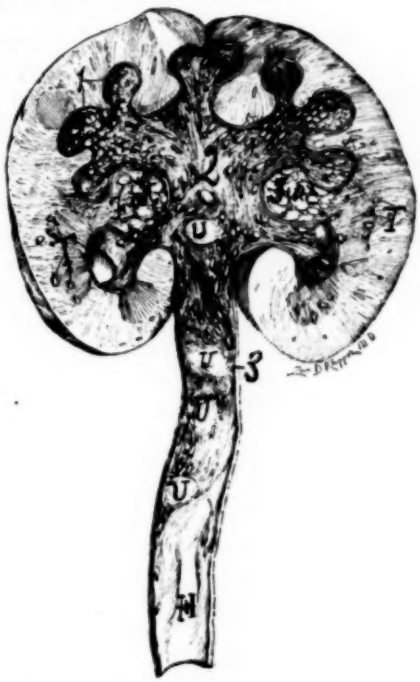
The course of tubercular ureteritis is pre-eminently a chronic one—averaging perhaps three years. The maximum number of subjects are doomed. When the tubercular renal parenchyma ruptures into the calyces, pelvis and ureter proper, uro-ureter and pyo-ureter in varying stages and periodicity may result. The tubercular ureter may be dislocated by adjacent adhesions, flexed by bonds, and strictured by compression—sensation, the essential initiative for function becoming blunted and consequently peristalsis is compromised—whence the ureteral disease is swiftly onward and swiftly downward.

Subjects with tubercular ureteritis die frequently of nephritis or sepsis.

Tubercular ureteritis may be divided into two groups: (A), the acute or miliary form, and (B), the chronic or caseous, degenerative form.

A. *An acute miliary ureteral tuberculosis* represents in general a local expression of a general corporeal tubercular infection. The tubercles appear in the form of gray nodes, occasionally transparent. The tubercular nodes change appearance with age. The nodes may be coalesced or exist separated. Areas with coalescence may present caseous degeneration. This form has slight interest in surgery, as it is seldom or never operated. It prevails in children.

B. *The chronic caseous ureteral tuberculosis* is the form which interests surgeons, and is the common form. The chronic form of ureteral tuberculosis begins chiefly in the ureteral calyces and pelvis. In fresh cases the mucosa of the calyces and pelvis is moderately swollen and bedecked with grayish or yellowish tubercles which have a tendency to group or coalesce. The fresh tubercles are separated by marked distance while the older tubercles coalesce, become caseous, producing a mucous ulceration, which practically destroys the mucosa. The tubercular ureteral mucosa adheres vigorously to its base. In the ureteral pelvic lumen or pelvic wall may occur spaces occupied by caseous masses which are sharply marked from the adjacent reddened mucosa. In advanced cases of ureteral tuberculosis, especially of the calicular and pelvic type, one may observe only fragments or rests of the normal calyces or pelvis. The pelvis and calyces become occupied by caseous masses and detritis, and practically destroyed. Pyo-ureter and uro-ureter supervene, whence fluctuation may be detected. The calyces and pelvis may become one connected, dilated sac occupied with caseous masses. The so-called *tubercular caverns* (dilated, calyces, pelvis) accompanying tubercular ureteritis depend on the atrophy, destruction or evacuation of the caseous masses. The proximal and distal calyces present the most typical tuberculosis caverns. In some cases of tubercular caverns one finds the renal parenchyma atrophied to a minimum, the calyces and the pelvis (as well as the proximal end of the ureter proper) dilated to a maximum. However, located on some of the less dilated calyces with normal mucosa may be found remnants of healthy renal parenchyma. By close scrutiny the invasion of this calicular mucosa, by groups of tubercular nodes may be observed. Patients which almost from the beginning of their attacks on the ureteral calyces and pelvis present tubercular caverns—i. e., dilated calyces and pelvis occupied by caseous masses in conditions of atrophy, destruction or evacuation—the ancient physicians termed phthisis renalis. A tubercular cavern has the signification simply that a dilated cavity (especially a dilated calyx or pelvis) was once occupied by a caseous mass and by atrophy, destruction, fragmentation or evacuation of the mass the cavern results. During the destructive invasion of the tuberculosis in the dilatating calyces and pelvis cicatricial bands of varying degrees representing the original diseased walls of the calyces and pelvis may be observed. The calyces may dilate until the renal parenchyma disappears from pressure necrosis, leaving the fibrous renal capsule only. I have performed nephrectomy with a kidney dilated until its diameter measured some ten to twelve inches and in such specimens frequently only the fibrous renal capsule exists expanded over the dilated calyces. The giant caseous masses occupying the dilated calyx or pelvis become diminished through absorption of the fluid dessication, diminished or possibly absorbed, at least to dryness or inspisation, whence calcium salts are manifest in the residue ($CaCO_3$, $CaHPhO_3$). The salts are perhaps secondary to the infiltrated ureteral mass. The tubercular bacillus and tubercle nodes desquamated the calicular and pelvic mucosa whence calcium salts were deposited. Occasionally, rarely a calicular or pelvic tuberculous cavern subsequent to inspisation or disappearance of the caseous mass may indicate recovery. Different writers on tuberculosis of the urinary tract have attempted to analyze the different forms, especially Tuffier, Irsael, and Kuester. I shall present the following in what I consider appropriate nomenclature.



1. *Pyo-ureteritis tuberculosa* or suppurative tuberculosis of the ureter (especially of the calyces and pelvis). This is a common form of tuberculosis of the ureter, especially of its proximal end. It sooner or later becomes a mixed infection.

2. *Uro-ureteritis tuberculosa* or tubercular uro-ureter. This may be viewed as primary tuberculosis of the ureter and begins in the calyx or pelvis. In some subjects the kidney and bladder may be healthy and tubercular ureteritis alone present.

However, the rule is that the tuberculosis begins in the kidney and gradually progresses distalward in the ureter—calyces, pelvis, ureter proper and finally infects the bladder. In tubercular uro-ureter the mucosa is reddened and swollen and bedecked with extra mucous. The tubercular nodes attack the ureteral mucosa in streaks, zones, groups. Perhaps these streaks or groups of tubercular nodes in the ureter are the special line of the urinal flow in certain individuals and thus the tubercle bacillus passing constantly over definite areas of the ureteral mucosa will infect them. It is exactly the condition in the vesical trigone the radiating urinal stream infects the trigone in areas of urinal flow. Also it may be remembered that mucosa may be infected

when there is a lodging place, a harbor, a diverticulum in its folds. The mucous ureteral folds present congestion—hence excessive mucous is secreted which also enables the tubercle bacillus to locate and thrive. Congestion, extra mucous, multiple culdesacs and folds from oedema enhance factors for the permanent implantation and thriving of the tubercle bacillus on the ureteral mucosa. The kidney or bladder may be healthy and the tubercle bacillus being simply filtered through the kidney from the blood. The ureteral walls present multiplication of cells, especially round cell infiltration, in the mucosa and submucosa. Giant cells may be noted (see Fig. . .). With the naked eye the gray tubercular nodes are plainly visible as may be noted in all the illustrations. The nodes coalesce in streaks, zones or groups and cover the mucosa as a veil. Sooner or later the superficial ureteral epithelial layers become desquamated and ulceration begins its inevitable course. With caseous degeneration of the base and border of the ulcer and coalescing the neighboring ulceration larger areas of deep ulceration arise. The caseous infiltrate gradually progresses and as it becomes degenerated, fragments, exfoliates and the process repeats itself with deeper profundity. The new tubercular nodes develop on the base and the border of the ulceration, and tend to project toward the ureteral lumen or especially toward the ureteral cellular tunic which in advanced cases presents a nodular, irregular, beaded, uneven surface. In some subjects the ureter may be extensively dilated without apparent obstruction due perhaps to the defective strength of the ureteral wall from inflammatory processes. The tubercular ureteritis produces a paretic state of the ureter. In other cases belonging rather to other forms of tubercular ureteritis, the ureteral lumen is diminished from caseous degenerative products, detritis. In tubercular ureteritis, however, the ureteral muscularis long withstands the tubercular invasion. The mucosa suffers from the beginning and quickly the tunica cellulosa or adventitia becomes infiltrated into a rigid, indurated cylinder—palpable, inflexible, stiff like a lead-pencil. Occasionally a cicatrization rapidly enters with contraction remarkably diminishing the length of the ureter, dislocating and distorting its vesical ureteral orifice. Also in the region of the cellular ureteral coat one may find hypertrophied, caseous, degenerated lymph nodes which enhance the ureteral cicatrization. In autopsies I have observed these hyperthropic lymph nodes produce obstructive angulation in the ureter. A tubercular uro-ureter practically sooner or later becomes a uro-pyro-ureter from infection.

3. *Uretero-nephritis tuberculosa* or combined tuberculosis of the ureter and kidney. This is a common form and explains itself.

4. *Infiltratio tuberculosa* or tubercular infiltration.

5. *Massiva tuberculosa* or massive tuberculosis. This name was applied by Tuffier to large masses of tubercular products—masses of caseous degeneration, pus, detritis. This class indicates only a marked direction of producing caseous degeneration.

6. *Caseosa cavernosa tuberculosa* or caseous cavernous tuberculosis. This classification indicates that large masses of caseous degeneration, pus and detritis was formed and subsequently by absorption, contraction and evacuation the dilated cavities were evacuated, leaving a cavern or practically unoccupied sac, space. It is a stage only in tubercular ureteritis.

7. *Caliculitis tuberculosa ulcerosa prima* or primary tubercular ulceration of the calyces. The name indicates this classification. Almost all ureteral tuberculosis begins in the calyces, i. e., in the cribrum benedictum—primary or secondary.

8. *Tuberculosa nodosa* or nodular tuberculosis. This kind or form of tuberculosis is common, as the tubercular nodes develop to a certain dimension and consequently project in some direction, they necessarily appear as nodes in the ureter or in many other localities.

9. *Tubercular cholesteotoma formation of the ureter.* This is a form of tubercular ureteritis introduced by Herczel in 1884, when he published the renal surgery of Zcerny's clinic.

It especially refers to the ureteral pelvis. Beselin later published this form under the title of "cholesteotoma desquamation of ureteral pelvis." The calyces and pelvis are dilated and become occupied with pulp-like masses, yellow detritis. Ulceration extends from the ureter into the renal parenchyma. The calyces and pelvis at first contains cloudy urine. Later caseous detritis collects and pyo-ureteritis follows with nephrititis. It is practically a mixed infection.

The above nine forms of tubercular ureteritis are simply modifications of the course of the disease as noted by different observers. The end results are practically identical. The genus is ureteritis tuberculosa. The species—chips of the parent block—are mere variations of appearance. The diagnosis and the treatment is practically similar. The study of ureteral tuberculosis doubtless will demonstrate that in great numbers of patients the ureteral tuberculosis (and, for that matter, much renal tuberculosis) begins in the ureteral calyces (i. e., in the cribrum benedictum) and pelvis. Autopsies and section in vivo demonstrate that the so-called original renal tubercle may begin in the calyces and pelvis. In many extirpated kidneys the number of tubercular nodes are limited in the kidney, while the calyces and pelvis are advanced in tubercular disease.

Fig. 1. Man, 20 years old. Tuberculosis of the ureter. It is practically reno-ureteral tuberculosis. The tuberculosis probably began in the renal parenchyma. However, the bladder is markedly affected with tuberculosis. T indicates the tubercular nodes. The tubercles are evident in the ureteral mucosa and periureteral cellular coat. The ureteral musculosis is the last coat to be attacked. The left ureter is dilated. Both ureters present ureteral isthmuses (3, 5, 7) and dilations (1, 2, 4 6).

The diagnosis of reno-ureteral tuberculosis mainly rests on:

. 1. Clinical history. 2. Physical examination. 3, Urinalysis. 4. Cystoscopy and separate ureteral catheterization. 5. Tuberculin test.

As a rule reno-ureteral tuberculosis manifests tenderness by pressure—at the three ureteral isthmuses, proximal isthmus (at distal renal pole); middle isthmus (at vasa iliaca communis); distal isthmus (at urinary vesical wall).

Recurrent or Cyclic Vomiting may be due to: a pure neurosis; a toxic neurosis; an acidosis from a vicious metabolism principally in the digestion of fats, with or without autolysis; a toxicosis from intestinal putrefaction when accompanied by a suboxidative power of the body cells; a rheumatic diathesis.

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PREPARATORY MEDICAL COURSES.

TWENTY years ago, an esteemed correspondent graduated at a medical college which had about as good a standing as any after the first three in the seaboard cities. At that time no preliminary education was formally required, though, as a recent graduate expressed it, the examinations were a trifle hard on those who could not read and write. This was not altogether irony, for there was a tradition that, within the last few classes there had graduated a man who could write little more than his name and, during our correspondent's residence, one man was persuaded to leave at about the middle of his first year because, while not actually illiterate, he was so nearly so that he could neither read intelligently nor write sufficiently to express himself. For instance, one of his notes on a lecture on the mechanism of labor was as follows: "The megism of labor is that that is the labor of megism."

Very shortly after this time, however, the efforts which had been pressing upon the college and legislatures for many years, produced an onward movement, and since about 1900 most states and colleges have, at least nominally, required a high school education of the medical matriculants. Progress is always more rapid when one gets out of quicksand and on to solid ground. Having established the precedent of a definite requirement of something, it is fairly easy to advance the requirement, especially in consideration of the fact that the medical profession is already full to overflowing.

In 1893, Johns Hopkins graduated its first class, having established its medical school firmly on the basis of a full college education. This institution was unique in its standard till 1900, when Harvard followed. At present, of the 152 medical schools, 11 require two or more years of college study and, considering the fact that certain of the technical studies pursued under the laboratory system of a first class medical school, are essentially of the same scholastic and educational value as those in college schedules, a medical course based on two years of college work, really includes a full scientific college training, should, and often does lead to the degree of B. S.

Two medical schools, at least, already require one year of college work. Fifteen will require by the fall of 1910 two years of college study, and 24 others will require one year.

It is interesting to note what proportion of the medical graduates will be affected by these changes and we have, therefore, compiled the following statistics, based on the actual number graduated in 1908. For various reasons, including the present financial panic and the increase of educational and technical medical requirements, it is improbable that there will be any material increase—and indeed we may reasonably hope for a further decrease—in the total graduation of physicians during the next several years. Of course, the increase in requirements will tend to diminish the attendance at any college instituting this reform, but the reform is so widespread that many prospective students will be discouraged from entering on a medical course, instead of being merely shifted to another college. Then, too, 8 of the medical schools which announce the higher requirements have, thus far, not graduated any classes, but being, with one exception, state university departments and having already considerable undergraduate attendance, they are bound to have a fair representation in the matriculants of 1909 and 1910.

Graduates from all medical schools, 1908	4,741
Graduates from schools already requiring 2 or more years of college	413
Graduates from schools which will require 1 year of college	*88
Graduates from schools which will require 2 years of college by 1910	657
Graduates from schools which will require 1 years of college by 1910	782
	1,940

Already about 18 per cent. of all recent medical graduates have college degrees and, even when no education at all was required, the proportion was 5 to 10 per cent. The above statistics show that, within the next few years, unless there is a marked shifting of numbers to inferior schools, very nearly 23 per cent. of all medical students will be compelled to have a college education, at least in the sense of having taken a 6-year combined collegiate and professional course, which is virtually as much of an educator as a hit-and-miss college course taken without reference to one's future career.

*Some of these included in the next heading, already require one year of college work.

A little over 40 per cent. will be required to have one year's work in college.

But this prophecy, optimistic as it is, is probably an underestimate. With 26 colleges of medicine definitely committed to a 6-year combined course or a full college course as a preliminary, and 26 others already committed to one full college year, we have an upward pull which the other 100 cannot long resist. Indeed, at least a dozen have already expressed an intention to require some college work in biology, chemistry, etc. Meantime, the tendency to unite competing, weak schools continues. Another factor is the personal influence and ambition brought to bear on the individual student who enters college with the intention of merely fulfilling the requirements of a medical course. When he finds the intellectual and social atmosphere so pleasant, and considers that one or, at most, two years more will give him the additonal preparations and prestige of a full college education, he will be very likely to increase his own standards.

SICKNESS INSURANCE FOR GERMAN WORKMEN.

THREE years ago Count Posadowsky declared in the Reichstag, that "if Germany has just experienced a vast industrial expansion, equalled by that of no other country in the world during the same time, it is chiefly due to the efficiency of its workers;" and he continued that this efficiency must inevitably have suffered "had we not secured to our working classes by the social legislation of recent years a tolerable standard of life and had we not as far as was possible guaranteed their physicial health?"

It is to the last clause of the sentence here quoted that we would especially direct the reader's attention. By the triple system of assurance which obtains in Germany workpeople in time of need or accident are vouchsafed adequate medical treatment either at home or in hospitals, together with such pecuniary benefits that the home can be maintained at the usual level of comfort, without any serious depletion of family savings where such exist, whilst pensions are granted in the event of premature invalidity and in old age. By these provisions the weight of uncertainty and apprehension which in most countries presses so heavily upon workingmen, anxious as heads of families to meet their responsibilities, is decidedly relieved; for should the worst come absolute want need not be feared.

It is here interesting to note the connection of Mr. Wm. H. Dawson* that of all the measures passed in the interest of the working classes of Germany during the last twenty-five years the insurance laws are not merely the most beneficent; they are also decidedly the most popular. The magnitude of the industrial insurance system is certainly impressive. In 1905 nearly twelve million workingmen of all classes in Germany were insured against sickness; and nearly $70,000,000 was paid by the sickness funds in benefits of all kinds. The number of workpeople (including agricultural laborers) insured against accident in that year was 18,750,000; and the value of the compensation in benefits of all kinds given to the victims of accidents and their dependents was nearly forty-four millions of dollars. In 1895 nearly fourteen millions of persons were insured against old age and invalidity; and the sum paid in pensions and other benefits was about $28,000,000 in addition to some $12,000,000 paid in subsidies by the empire. Between 1885 and 1905 nearly seven hundred millions of dollars were paid to insured workpeople in suck benefits; in accident benefits about $300,000,000; and since 1891 in old age and invalidity pensions nearly $300,000,000.

We do not present these statements with a view to urging their emulation in this country; indeed, we believe, paternalism of this sort would be disastrous for our people; and we have in these columns reprehended the English adoption of the old age pension scheme. But we do commend the basic idea that the prosperity of our country, and consequently of ourselves as a profession, must depend largely upon the health of the people who do the country's manual work. With regard particularly to the tuberculosis situation which so largely affects our working people. Cornet, from out his vast experience, has found that that consumptive workman has, up to recent years at least, been infecting his fellow-workmen more than the members of his own family. This grave state of things should be comprehended and remedied. In some measure, indeed, this situation has been grasped and is being remedied. Spittoons, ventilation and other means of prophylaxis are now enforced in workshops and factories. Furthermore workingmen are now taking into their own hands (as in all reasonableness they should) the appropriate remedial measures. Organized labor now successfully demands hygienic workshops. And the labor unions are beginning to own and to maintain their own sanatoria. The Typothetae have an excellent institution for the relief and cure of their consumptive members in Denver; and in Albany organized labor has erected a fine pavilion with this sentiment (we do no recall the precise words): This is organized labor's contribution to the anti-tuberculosis propaganda; "what's yours?"

*The Evolution of Modern Germany (Scribners).

THE YOUNGER MEN IN MEDICINE.

WE read with interest that at thirty-two Dr. Henry Asbury Christian has been appointed Dean of the Harvard Medical School; nor is this an unusual distinction for this period of life. For others of Dr. Christian's associates, and whose years are as his, hold also, places of great responsibility and honor; among whom are: Dr. Timothy Leary, Professor of Pathology at Tufts Medical School; Dr. W. P. Brinkerhoff, Director of the Leprosy Hospital at Honolulu; Dr. R. L. Thompson, Professor of Pathology at St. Louis; Dr. E. E. Southard, of the Harvard Medical School; and Dr. R. M. Pearce, Professor of Pathology in the University-Bellevue Medical College.

It is not the comparative youth at which these physicians have so deservedly attained eminence which appears to us to be emphasized; it is not singular that men in these years should have become sufficiently mature for such responsible work. After thirty there is no great reason why men should not be able for almost any position in life:

> High to strive, and deep to dive,
> Becomes a man at thirty-five.

And we may add that nowadays few men need lay down their instruments and resign their occupations until several decades after thirty. What we would here emphasize is the training which Dr. Christian and his associates have undergone, by which they have become fitted for their important posts. They have in all essentials followed in the footsteps of a great clinician of our city, of whom it has been said that "he buried himself for ten years in the morgue." By this it is meant that he gave most of that decade to studying cases, with infinite attention to detail, from the moment of their entrance into hospital to the minutest investigation on the autopsy table. Nay, more than this: the ancestry of the patient was sought, his family history, his possible diatheses and his previous illnesses from birth; most careful notes of symptoms and of therapeusis were taken; and then the postmortem either verified his diagnosis and justified his course of treatment or revealed to him his errors. Thus did he acquire to begin with, and as the foundation of his practice, a vast experience. Certainty was constantly aimed at; haphazard conjectures and snap opinions were as much as possible eliminated.

Thus with Dr. Christian and his associates: they were all trained by such men as Dr. Osler, Dr. Flexner, Harvey Cushing and L. F. Barker. In their teaching, laboratory research was combined with bedside methods. Most of them manifest the influence of Johns Hopkins. Dr. Christian, however, got his hospital technique in Germany where they are nothing if not thorough. There was once a man over there who devoted three years to the alkaloid of red pepper. There is also the story of the eminent German philologist who had given his whole intellectual life to the study of the Greek article; but on his deathbed he confessed bitterly and with as much remorse as any criminal might manifest, that his career had been a dire failure; he should have confined his researches to the dative case.

Nevertheless that physician is truly fortunate whose work in medicine has been well grounded in laboratory work. To return to Dr. Christian: Under Dr. F. B. Mallory, of the new Boston hospital laboratory, he learned thoroughness in autopsies and the importance of studying all the organs at death. His hospital practice and teachings are said to have been varied; and he is now associated with an inter-civic clinical movement by which the wise methods in medicine represented by him shall be promulgated through all our American municipalities.

A TOO FREQUENT MISHAP.

THE case is reported of a lady who had been an invalid from her youth. Eleven years ago, after other therapeusis had proved ineffectual, she underwent an abdominal operation by a surgeon of great skill and reputation who has since died. At first the patient did well after the operation; and it was believed by her family and the surgeon that her health would be fully restored. She soon, however, began to suffer again and to exhibit incomprehensible symptoms; various treatments proved unavailing; nor could satisfactory diagnosis be made. Another operation was several times advised, but as the specific reason could not be shown by the consultants the patient refused to go again under the knife. The patient was taken abroad by her father, and European surgeons were consulted; they also concluded that only by laparotomy could the diagnosis be established. The patient still refused operation; and years were spent in journeys to one after another health resort in search of a remedy. Recently, the case becoming grave, an X-ray examination was had, when some solid substance in the abdomen was revealed. She then submitted to operation at the University Hospital in Philadelphia; when a surgeon's forceps was found imbedded among the intestines. The poor sufferer did not survive the shock of this second operation; the relief had been too long delayed.

Here is as sad a case as any to be found in life. And we observe with profound regret that such accidents have not been rare in the history of abdominal surgery; instruments, gauzes and sponges have been sewn up within the abdominal cavity with melancholy frequency. In the case here cited it is believed that the surgeon who officiated at the first operation (and whose name the

patient's father most generously withholds, in order that the disclosure may not give pain to his family) was not blameworthy, and that the responsibility really rested upon an assistant "who probably became nervous and dropped the forceps into the abdomen whilst his chief's attention was for the moment centered elsewhere." This is a lenient view to take of the matter. The surgeon in charge of a case is like the captain of a ship; he is in fact (and in justice too, we think), primarily responsible for every detail connected with the operation he has undertaken to bring to a successful conclusion.

DR. WILLIAM TILLINGHAST BULL.

DR. BULL'S calm and most courageous fight against a disease of which he had so often striven to relieve others has now entered into the history of our profession; besides this there is much else in his career which will surely become interwoven with its noblest and most precious traditions. With the facts of the life of this surgeon, so pre-eminently able and skillful, of this man so self-abnegating and altruistic, all medical men are familiar. He was born nearly sixty years ago in Newport, whither centuries before Henry Bull had come with the Roger Williams colony. This ancestor, twice Governor of the "Rhode Island and Providence Plantations," was, with six others, one of the original purchasers of the Island of Aquidneck, and as his share received land on the present site of Newport, lots which have for 250 years past, and which are still to this day, owned by members of the Bull family. A Harvard man of 1869, Dr. Bull entered the College of Physicians and Surgeons, studying through his course with Dr. H. B. Sands, and graduating with honors in 1872. After an interneship in Bellevue and two years spent in Europe he began active practice in this city. The call of the operating room was always irresistible for this natural surgeon; and he was constantly at work in one or another of our great metropolitan hospitals. His first illustrious achievements were in abdominal surgery—in cancer, hernia, appendicitis, and especially in gunshot and stab wounds of the intesties, which had before his service had a prognosis almost uniformly bad. He was among the first successful operators upon the appendix. It is related that Capt. Edward Temple Rose, a noted Londoner, suffering from appendicitis, was referred to Billroth of Vienna and Bull of New York, as being the two men best fitted for this work; he went to New York, and was successfully operated on by Dr. Bull.

It is a touching consideration (and one, strangely enough, not unique in medical annals) that Dr. Bull had given deep attention to the etiology and the possible cure of cancer as if he had had some premonition of the disease which afterward so cruelly beset him. Having had often to operate for cancer, he diligently sought a cure. His friends now wonder how early he found that he was afflicted with it and whether his own case had anything to do with his beginning to dig deep into the mystery of this dreadful disease. Several years ago, indeed, he followed operations upon cancer by injections of erysipelatous serum—a treatment which proved, however, to be ineffective. Ten months ago what was then presumed to be an abscess of the neck, was opened; in June last another operation was done, when a specimen from the wound, examined by himself personally, was found to be cancerous.

Dr. Bull might have shone, had he desired, most brilliantly in social matters; he preferred, however, the arduous service of sick and suffering humanity; how great an inspiration to the medical neophyte was his career! He did not amass the wealth which is generally assumed to be the portion of great surgeons. He took many a desperate case for no fee or one which a beginner would have scorned. It is stated that in one month he had done an average of three operations a day; such work should, according to the fees usually charged by surgeons of equal reputation, have brought a small fortune; yet the total was little more than the remuneration of an ordinary practitioner. Genuinely sympathetic, he worked ceaselessly and untiringly for the poor; nor did he even lose sight of the patient in the "case." "Besides being one of the greatest surgeons in America, he was a big, broad-gauged man. In every sense by which we measure public service he rendered a full and complete account."

MILLIONS AND MALARIA.

WE several months ago printed an item with this title, and would here revert to the subject, which may assume some little importance with the departure of cold weather in our latitudes. The English Imperial Department of Agriculture for the West Indies has, so a pamphlet which has reached us states, introduced these zealous and active coadjutors of kerosene in the extermination of Culex, Stegomyia and Anopheles. "Millions" is a fish, the longer specimens of which measure an inch and a half, the female being the larger and dull in color; the male marked with irregular red splashes and a round black spot on each side. Millions inhabits fresh water streams, is a strong swimmer against the current, and thrives in shallows. These little fish multiply prodigiously, glut themselves most

voraciously on larvae and pupae, and eat a surface clean of mosquito growth to a degree almost incredible. They are hardy, stand transportation well and may be relied on to do the work of kerosene at less cost in the long run.

Experts know full well that millions has congeners in the sunfish, which eats the mature mosquito alive; in killies, a salt water fish; in the top minnow; and in the "blue eye," which the Italian Government has imported from Australia to consume the larvae of Anopheles. But on the recommendation of the Imperial Department aforesaid, one must conclude that millions is the champion fish when it comes to appropriating disease-bearing mosquitoes. They are working overtime in many West Indian islands. Being vivaparous (bringing forth living young) they lose no time in making tidbits of their natural enemies.

Possibly millions would not be needed to rid Long Island and New Jersey altogether of mosquitoes; it is given us to understand that by reason of ditching, draining and kerosening under the masterful generalship of Dr. Doty, the mosquito is now as extinct as the dodo in those waters; but in shallow fresh waters, streams, brooks and kills, or standing water the millions could do superb execution.

It is declared that in Barbadoes, where these fish abound, malaria is unknown; for the reason, it would seem, that the natural breeding places of Anopheles are the habitat of millions. Other West Indian communities are finding them an effective destroyer. The matter is well worthy the consideration of our own malaria-infested communities.

OUR MEDICAL SISTERS AND THE SUFFRAGE.

WE recognize fully (and with gratification) that politics is not within our editorial scope; nor will our readers expect from us opinions regarding that stormy and vexed sea. We believe nevertheless that our brethren will learn with interest, sympathetic if not adoptive, of some of the earnest representations now being made by our professional sisters in England.

Premier Asquith, having invited an expression of opinion from his countrywomen upon the expediency of granting the franchise to their sex, received a memorial from 538 out of the 553 registered women practitioners in the United Kingdom, setting forth the reasons why such members of their sex as answer the conditions prescribed by law for men should be given votes.

Our feminine colleagues point out that legislation has often to do with matters concerning directly the duties and privileges of medical practitioners; wherefore they desire the franchise, in order for the protection of their personal interests and to co-operate more effectually in advancing the general interests of their (and our) profession. In earning their living they necessarily encounter the same economic conditions as medical men; and they claim that they should have a voice in the regulation of these conditions. As taxpayers and self-supporting women moreover, they offer an incontrovertable example of taxation without representation. Besides being taxpayers, our medical sisters in England are all graduates of universities or holders of diplomas of learned bodies. Male membership in a university is there in itself a qualification for the franchise; wherefore women physicians have at once a double claim to the suffrage possessing both the property and the university graduate qualifications. It is indeed a striking anomaly of their present political position that while as women they are debarred the exercise of the elementary right of citizenship they possess as doctors, in common with men, the legal power to sign certificates of insanity which deprive men of the right to vote. Many laws are cited in this memorial which especially effect women; yet in the framing of them women have no constitutional part. Among such are the laws relating to public health and morals, those which define the rights of parents with regard to the education, religion and guardianship of their children, those which deal with marriage and divorce, with the housing of the poor, the care of the feebleminded, the question of intemperance and the regulation of female labor. It is claimed for all women that the woman's point of view should have representation in such legislation, and that medical women are especially fitted to assist in the solution of some of the problems with which these measures deal. Our sisters are convinced that the possession of the vote would exercise a stimulating effect upon women. Those of education and leisure would be led to an increased readiness to undertake work in branches of public service in which the co-operation of their sex is peculiarly required; "whilst among all classes a sense of responsibility and consciousness of responsibility and consciousness of citizenship would be fostered which would tend to induce an earnest and intelligent interest in matters affecting the public health."

Manila's New Water Supply is taken from the Mariquina River, twenty miles northeast of the city. The reservoir has a capacity of fifty million gallons. The cost of the completed work is about $1,500,000 gold as far as the Deposito; and the distribution system to be installed throughout the city will cost about $500,000 additional. The new system can supply 22,500,000 gallons of water every twenty-four hours.

BIBLIOGRAPHICAL

A Text-Book of Medical Chemistry and Toxicology. By James W. Holland, M.D., Professor of Medical Chemistry and Toxicology, Jefferson Medical College, Philadelphia. Second revised edition. Octavo of 655 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company. 1908. Cloth. $3.00 net.

This work has been written by an author who understands and appreciates the needs of the junior medical student. He does not take it for granted that the beginner in medicine has an adequate preparation in elementary chemistry. In this book the ground is first laid by the elucidation of chemical philosophy, and then the relationship of physiologic chemistry and toxicology are better understood.

The book has been thoroughly revised and made to accord with present conditions. Additions to be especially noted are those relating to the electronic theory, chemical equilibrium, Kjeldahl's method for determining nitrogen, classification of alkaloids and of proteins, chemistry of foods and their changes in the body, synthesis of proteins and the latest improvements in urinary tests.

The book cannot be too highly commended as a text-book.

Epoch-making Contributions to Medicine, Surgery, and the Allied Sciences. Being reprints of those communications which first conveyed epoch-making observations to the scientific world, together with biographical sketches of the observers. Collected by C. M. B. Camac, M.D., of New York City. Octavo of 435 pages, with portraits. W. B. Saunders Company. 1909. Artistically bound. $4.00 net.

In the arrangement of this novel volume, no effort has been made, either to include all articles on the subjects which appeared at the time of the epoch-making one, or to present the subjects in chronological order. The main object is to make the articles available for present uses. The articles are really biographical sketches of the scientific side of the investigator, with portraits. There is also an autograph letter of Lord Lister.

The subjects covered are: Antisepsis, by Lord Lister; Circulation of the Blood, William Harvey, M.D.; Percussion of the Chest, Leopold Auenbrugger, M.D.; Auscultation and the Stethoscope, R. T. H. Laënnac, M.D.; Vaccination Against Smallpox, Edward Jenner, M.D.; Anesthesia, Wm. T. G. Morton, Horace Wells, John C. Warren, and J. F. Simpson; Puerperal Fever, O. W. Holmes, M.D. No doubt many will be glad to possess these epoch-making articles, which before now have been difficult to obtain. The subjects are certainly of the greatest interest to us all.

A Text-Book of Materia Medica, Pharmacology, and Therapeutics. By George F. Butler, M.D., Professor and Head of the Department of Therapeutics and Professor of Preventive and Clinical Medicine, Chicago College of Medicine and Surgery. Medical Department Valparaiso University. Sixth edition, revised and enlarged. Octavo of 708 pages. Philadelphia and London: W. B. Saunders Company. 1908. Cloth, $4.00 net; half morocco, $5.50 net.

This is one of the best and most practical text-books for the student and for the practitioner, that has been published. The rapidity with which the editions have followed each other is an evidence of its popularity.

Special prominence is given to the therapeutic sections, which probably accounts for the demand which is made for this publication.

The arrangement, based upon therapeutic affinities, is in every way excellent, and the text includes only such drugs as are of unquestionable value.

It contains a practical discussion of Opsonin's, Opsonic index, and vaccine therapy, from the present viewpoint.

There is a clinical index which will be found of great convenience. Our readers should not hesitate to procure a copy.

Primary Studies for Nurses: A Text-Book for First Year Pupil Nurses. By Charlotte A. Aikens, formerly Superintendent of Columbia Hospital, Pittsburg, and of the Iowa Methodist Hospital, Des Moines. 12mo of 435 pages, illustrated. Philadelphia and London: W. B. Saunders Company. 1909. Cloth, $1.75 net.

The purpose of this book is to help in securing graded instruction in training-schools, to promote uniformity in teaching, to assist in eliminating non-essentials. It is a first year book of practical importance, and should be read by every student nurse, and the teacher will find it of great service too.

We cannot speak of the book too hightly for its purpose.

Saunders' Question Compends. Essentials of Bacteriology. By M. V. Ball, M.D., formerly Instructor in Bacteriology at the Philadelphia Polyclinic. Sixth edition, thoroughly revised. 12mo volume of 290 pages, with 135 illustrations, some in colors. Philadelphia and London: W. B. Saunders Company. 1908. Cloth, $1.00 net.

The present edition of this book has been thoroughly revised, new chapters on Protozoa and Opsonic Technic added, and contains the essentials of larger works, sufficient for most purposes.

The student of course must have it, and the clinician and the sanitarian will find it of great convenience for ready reference.

Appendicitis and Other Diseases of the Vermiform Appendix. By Howard A. Kelley, M.D., with 215 original illustrations, some in colors, and three lithographic plates. Octavo pages 502. $6.00. Second edition. Philadelphia and London: J. B. Lippincott Company. 1909.

This great and elaborate work of Prof. Kelley of Johns Hopkins University, modestly dedicated to the "General Practitioners in America," is not only classical, but a work of art, as to the quality of its illustrations. There can be no word of criticism of such a production.

This new edition is a compact résumé, dwelling with especial care on the practical side of the subject, in the interest of the general surgeon. The general practitioner cannot fail to be interested too.

Any reader requiring a work on this subject need not hesitate in ordering this, the last word upon the subject, from one of our highest authorities.

The Theory and Practice of Infant Feeding, with Notes on Development. By Henry Dwight Chapin, A.M., M.D., Professor of Diseases of Children at the New York Post-Graduate Medical School and Hospital; Attending Physician to the Post-Graduate.

Willard Parker and Riverside Hospitals; Consulting Physician to the Randall's Island Hospital, and to St. Agnes' Hospital, White Plains. Third edition, revised. With numerous illustrations. Octavo pp. 350. Price $2.25. New York: William Wood and Company. 1909.

The science and art of infant feeding has greatly advanced of late, and it has been found that there is vastly more in the subject than simply adjusting the quantitative differences between cow's milk and breast milk.

In this volume the subject is treated from the viewpoint that the infant is governed by the general laws of animal life and recognizes biology as of value in placing the subject in line with general scientific development.

Many of the chapters have been rewritten and broadened, and sections on the principle of top milks and the standardization of gruels have been added.

The book will be found of great practical value to the practitioner.

Quain's Elements of Anatomy. Editors Edward Albert Schäfer, LL.D., Sc.D., F.R.S., Professor of Physiology and Histology in the University of Edinburgh; Johnson Symington, M.D., Professor of Anatomy in Queen's College, Belfast; Thomas Hastie Bryce, M.A., M.D., Lecturer in Anatomy, University of Glasgow. In four volumes. Volume III. Neurology. By E. A. Schäfer and J. Symington. Part I. Containing the general structure of the nervous system and the structure of the brain and spinal cord. With numerous illustrations, many of which are colored. Eleventh edition. Royal octavo pp. 421. 15 shillings. Longmans, Green & Co., London and New York. 1908.

The second part of Volume III. of this great work will embrace the descriptive anatomy of the nerves and of the sense organs, which, with the part already before us, will constitute a complete text-book of neurology.

Too much cannot be said in praise of such a work, and there is no criticism possible.

Our readers will not hesitate to order this book as required.

How to Nurse Sick Children. By the late Charles West, M.D. Founder of and late Physician to the Hospital for Sick Children, Great Ormand St. With a preface by George F. Still, M.D., Physician to Outpatients. New edition. 12 mo. pp. 52. Longmans, Green & Co., London and New York. 1908.

A suitable and valuable little book for mothers.

Practical Physiological Chemistry. A book designed for use in courses in practical physiological chemistry in schools of medicine and of science. By Philip B. Hawk, M.S., Ph.D., Professor of Physiological Chemistry in the University of Illinois. With two full-page plates of absorption spectra in colors, four additional full-page color plates and one hundred and twenty-six figures, of which twelve are in colors. Octavo pp. 447. Price $2.50. Second edition, revised and enlarged. Philadelphia: P. Blakiston's Son & Co. 1909.

This book has demonstrated the truth of its claim to being "practical," as shown by the demand for a revised edition in so short a time.

The text has not only been thoroughly revised, but in part rewritten, the spelling changed and many new tests and methods introduced.

The advance and development made in this field have been both rapid and important, so that a new edition was imperative.

The work has our unqualified endorsement as to quality and practicability, and it can be depended upon as up to date.

Parcimony in Nutrition. By Sir James Crichton-Browne, M.D., LL.D., F.R.S. 12 mo. Cloth. 75 cents, net. Funk & Wagnalls Company, New York.

This interesting little book by an eminent author very cleverly and keenly attacks the theories of other prominent writers, and formulates some good, common sense ideas as to what and how much the normal human being should eat. The topic is timely, important and worthy of attention.

Progressive Medicine. A quarterly digest of advances, discoveries, and improvements in the medical and surgical sciences, edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia, and H. R. M. Landis, M.D., Assistant Physician to the Out-Patient Department of the Jefferson Medical College Hospital. March 1, 1909. Lea & Febiger, Philadelphia and New York. $6 per annum.

The present volume contains the surgery of the head, neck and thorax, infectious diseases, including acute rheumatism, influenza and croupous pneumonia, the diseases of children, rhinology, laryngology, and otology.

The subjects as usual, are thoroughly up to date, useful and interesting.

American Proctologic Society. The transactions of this Society, contains the papers and discussions of the 1908 meeting, etc., and will be found of interest not only to its members, but to those who are interested in the subject of proctology.

The Danger of Anesthesia is greatly diminished by the use of as little of the given anesthesia as possible; to this end the preliminary administration of narcotics is important. In addition to this and to the same end Klapp, states the Medical Record, would, during anesthesia, stop the circulation in the extremities by the use of elastic bandages. Animal experimentation has uniformly shown that by such diminution of blood anesthesia can be induced with a much smaller amount of the anesthetic, whilst the restoration to consciousness follows very rapidly the readmission of the circulating blood to the peripheral vessels. Zur Verth tried this method of Klapp in Bier's clinic in Berlin, and his report is very favorable. He anaesthetized in 100 cases after preliminary bandaging of the lower extremities, the arms were never cut off from the circulation because of the greater danger of injury to the nerves in the upper extremities. The results fully bore out the data of experimental work. Less anesthetic was used in all these cases than usually, strong patients being easily anesthetized by the ether drop method; return to consciousness followed almost immediately the removal of the bandages from the legs; no injurious after-effects were noted. Zur Verth dwells moreover upon the possibility of performing what he terms autotransfusion in accidents during anesthesia; in cases where chloroform is used especially, may the peripheral blood, rich in carbonic acid gas, act as a powerful physiological stimulus to the respiratory centers.

CORRESPONDENCE

THE TUBERCULOSIS AGITATION.

To the Editor of the MEDICAL TIMES:

AGITATE! EDUCATE! That eventually means a valuable degree of repression—not the obliteration—of the monster "White Plague," that eats out so much of the vitality of population wherever civilization has blindly neglected her watchful duty to protect herself against preventable disease. Through the strenuous enterprise and energy of our local champions who propose to resist the aggressions of tubercular diseases, the International Tuberculosis Exhibition now fills three extensive floors of a large building in the center of Philadelphia. By diplomatic advertising, the exhibition is daily thronged with thousands of visitors who seek information and instruction from this rare collection of exhibits which surprise, even astound, many who desire to learn the nature and extent of a preventable scourge which may be repressed by faithful observance of sanitary conditions if made available for human defense.

The interested public may here behold the proofs of all that has been revealed to positive research on the lines of diligent investigation as now pursued. And the progress of understanding is practically cutting loose from, and sweeping aside, the delusions of many theoretical inferences of the helpless past. Several commonwealths of our own country, reinforced by certain valuable contributions from distant countries, here present appealing proofs of the immediate need for advanced thought and rescuing purpose which animate modern sanitarians who make it a mission of life to actively wage earnest crusade against the insidious and most relentless form of disease known the world over as tuberculosis or consumption. And the closer it is studied the more evidently it is demonstrated that in tuberculosis we face a common foe generated by rancid and otherwise contaminated breathing-air which is indifferently allowed to infest many habitations, many business places, many infectuous locations, because the tuberculous tendency of such unsanitary situations is either defied or not timely suspected or resolutely combated until the fester of incurable degeneration has stamped its fatal seal on its unfortunate victims.

In the preceding paragraph I have employed the idea of indifference. The most stubborn fact that confronts the sensitively practical sanitarian, who would defend the public against the invasion of serious, possibly fatal, disease, is the almost resentful objection or resistance to any interference with the habitual neglect of free and continuous ventilation in homes and business places —where every breath inhaled should supply its fair share of blood purification and sustenance to health and vitality. How often it is pluckily responded, "Oh, I had the windows open for an hour this morning! That should be enough!" Boxed in thus, what of the remainder of each day and ensuing night's sleeping hours? "Where do you obtain your ventilation? Your windows are all closed, top and bottom!" I said one night to a gentleman of local prominence whose child was ill with bronchitis.

"Oh, I don't want any draft—enough air gets in through the cracks around the window sash!" was his prompt reply. His handsome wife looked on without utterance. The room was prettily furnished, was warmed by an artistic-looking anthracite coal stove, was lighted by a coal oil lamp with decorated shade. Sub rosa I prompted the wife to sneak a little helpful air into the room at times when the husband was asleep or absent from the room. The child convalesced and my bill cheerfully paid—for the father dearly loved his family. A few years later, after my removal, I was informed that his interesting wife had died of pulmonary consumption. His two children went into decline in early youth. And his own earthly exit was not long delayed. Stubborn, yet pathetic, examples of disbelief in sanitary quotas of fresh air ventilation in the home—for fear of a draft! There were no tuberculosis exhibitions in those far-away days to rouse interest in the matchless values of fresh breathing-air.

On visiting this vast tuberculosis exhibit the attention is grasped by the remarkable array of charts luminant with instructive information regarding the extent and prevalent locations of consumption. Plans adopted in different States and countries for the relief or treatment of the disease are strikingly illustrated. Various models of shacks recommended in the fresh air system of arresting tuberculosis fill out the convenient spaces. Nevertheless, how short sighted the plan! The patient's bed in one corner, near by the head of the bed a stand and kerosene lamp upon that stand! The smother of a corner location! The detriment to every breath at night of carbonic oxide gas from the combustion of coal oil if the lamp be lighted! No sick one's bed, child or adult, should be allowed to occupy the confinement and depression of a corner location in any room. Air in a corner is always stuffy and unsanitary in a few minutes. For small children specially, and for adults, I insist that the sleeping accommodations of the sick one shall be out in the open circulation of the apartment. And if a light must be used, place it as far away as possible from the patient, because of its consumption of the oxygen of the apartment and its contamination of the breathing-air.

In this exhibit we note the locations and surroundings of various sanatoria as typified on planes where trees and buildings are artificially represented. I was struck, for instance, with the incongruity in the German exhibit—apparently a vast level extent of trees, amid which were ensconced the buildings of two sanatoria. A little reflective analysis must decide that a level forest is not a logical situation for the care of consumptives. It presents the dank earth covered with a bed of rotting foliage which is annually shed from the boughs above the ground. And there is the absence of essential natural drainage. The great sponge of earth absorbing and holding the wetness of rains and melted snows. The shadows of foliags that drank the supply of sunlight for miles of surrounding distance. Consumption does not repair by the absorption of forest trees, even though pines. Consumption needs the fine free air and sunlight of open, well-drained soil and surroundings. In cheering contrast we notice the wisdom evinced by the elaborated model representing the local topography of our White Haven, Pa., Sanatorium, where the land is elevated, moderately rolling, located on a mountain side facing the all-day sun, and where drainage is naturally easy and complete. An uplift above valley or lowlands to an altitude where exhilarating ozone purifies and heals with every breath.

This well-favored sanatorium was started in the barn of a farm, but as now equipped, is the equal of any in

the world. That farmland affords opportunity for a measure of outdoor exercise in restorative air. There fresh vegetables are raised for the table—henneries managed for providing fresh wholesome eggs for patients who need them.

Obtained by autopsy of fatal cases, cases cared for at these charitable tuberculosis institutions, well preserved samples of actual tubercular conditions of the body, skilfully adjusted in glass containers, make up the most instructive part of this great exhibition. Examples of tuberculosis of most organs or parts of the human body are here presented. Lungs, liver, pleura, diaphragm, spleen, spinal column and cord, the brain in meningitis, the joints, larynx, kidneys, intestines, the skin as expressed by lupus. The exhibits by the Boston University School of Medicine are of superior order for delicacy and perfection of preparation. Also the exhibits by the Charity Organization Society of New York are specially definite and valuable for study. Perhaps the most disgusting exhibits of the human are examples of purulent pleurisy shown with pus accumulations. Also types of sero-fibrous purulent character. From the Phipps Institute, Philadelphia, is a fearful exhibit in glass tubes showing the degenerated waste matter consisting of blood and pus isolated from washed sputum and organs at autopsy, from cases of pulmonary tuberculosis. But the Phipps have another exhibit which purports to show, in glass tubes, crystalized or in powder form, samples of collected bacilli. These preparations doubtless represent evidences of the exaggerated ingenuity of some enthusiastic bacillian student who pushed laboratory manipulations to Barnumized degree. I considered this last exploit as a ventured "hoodoo" or hoax on public ignorance and credence. Another special exhibit exploited in a large glass case, and which discounts truth and trust, is a hand-made image of an entire inside view of one side of a shoat full length. The representation of lungs, ribs and other raw flesh has been artificially peppered with white substance, evidently with a small syringe, to represent staring tubercles projecting from the surface! I'll bet a handful of toothpicks the artist who got up that exhibit never helped to slaughter swine—though he doubtless had a real half shoat for his model—all except his tubercles standing out from serous membrane.

One may notice further in this exhibit there are fewer samples that demonstrate cases where lung cavities have healed over by bridges of fibrous tissue. In the majority of such cases death later on resulted from the original disease. While one cavity was being healed over by deposit of fibrous material, another was forming in the spongy substance of the lung, emaciation progressed, until the case reached the finale of autopsy. Unavoidably the lungs are impressed by the qualities of what is inhaled. Pure air and enough of it, constantly used, never can cause the lungs to develop tuberculosis. But air robbed of its normal proportion of oxygen, air overwhelmed by the carbon of smoke, by withering gases, by harrassing dust, by mold and feculence, by the rot of closeness and overcrowded breaths will most assuredly induce consumption where such contaminated breathing-air is tolerated. It is not in the nature of blood cells and tender membranes to indefinitely withstand persistent assaults of corrosion in the lung cells. How the lungs are directly impressed by the quality of air inhaled is strikingly demonstrated by the black sputum expectorated in "miners' consumption," as I have repeatedly witnessed among anthracite coal miners who inhaled much blasting powder smoke and fine coal dust at their work under ground. Furthermore, this International Exhibition convincingly shows us specimen of lung substance nearly black from infiltration by sooty smoke and dust. "Can any one be cured whose lung is like that?" was innocently inquired of me while gazing at the line of dusky specimen in glass jars.

"Evidently those with lungs like these certainly died —had to die—there was no other help for them, as you see, else these gruesome exhibits could not appear in these jars," I evasively replied, without a shorter "no."

What of the hungry, carbon-laden venous blood cells as they hasten with every laboring heart-beat to the disabled lungs for the sanitary relief of oxygenation by inhaled air? Deprived of vitalizing oxygenation, these burdened blood corpuscles cease to furnish adequate nutrition for the body, and progressive emaciation follows until there is little except skin and bones left to bury at the funeral.

Furthermore, what of the hobgoblin bacilli about which there is at present such raving chase by special tuberculosians? Could bacilli convey into the lungs the black smoke and coal dust which choked oxygenation for the lung cells to the extremity of death? Besides gazing with wonder at the destructive work of tuberculosis we are entitled to do independent reasoning for ourselves. No one with common sense would claim that a dose of bacilli induced a condition which allowed air spaces or lung texture to blacken with powder smoke, or coal dust, or other unsanitary stuff inhaled. And how about the smoke of coal oil lamps or of gaslights? These are incontrovertible, deciding tests of mistaken supposition that bacilli are the essential cause of consumption. Now, then, what is true of smoke and coal dust is just as true of any other sort of dust or grit or corrosive breathing-air habitually inhaled as stranglers of normal aeration, as despoilers of blood cells, as inducers of consumptive conditions. What solution can we therefore bring to the problem? The bacilli are the natural secondary product of the process of physical degeneration—positively and continually evident as the ferment of decay, the loosener of phlegm or sputum waste in hapless progress in the case so long as corrupt air is being drawn into the unfortunate lungs.

Dust-laden lungs means also badly aerated blood always, and blood defection can start tubercular degeneration anywhere in the system. Dust and gas-laden lungs usually cannot long remain in healthy condition, whether the subjects be children, youths or adults. Many tradesmen work daily in places productive of scathing grit. Let us pass these long enough to consider some of the ingredients of common city dust. With a proportion of earthy and sandy material ground up, there is mixed waste lint fiber of worn-off cotton and wool, also dried manure horse droppings upon the surface of streets, also excrement of dogs and sparrows, also epidermic scales shaken from bedclothing at open windows, refuse from dirty carpets beaten in back yards, scales or chaff from itchy skins of cats and dogs, dried remains of animal urine of all sorts everywhere evacuated upon streets or along pavements, these besides the sooty material from chimneys and smokestacks and locomotives. This is but a part of the unholy inventory.

The most pulverous portions of this compound, on windy days especially, are drifted into houses through every crevice, and there becomes, with every thrashing step, a component of the daily house-air. Also, on dry days, it is thrown up constantly by the whirling wheels of horse vehicles, by automobiles and street cars for public breathing. Is it not prodigious folly to expect that any serum bluff in the world will ever defend the open lungs of population against the irritating, the excoriating mischiefs of moldy room-air, rancid house dust, shop dust, store dust, school dust, church dust, rampant with the elements of rot? Therefore, our enthusiasts who prophesy the banishment of consumption in two decades more on lines of suppressing bacilli are certainly off guard in their declarations, and will unfortunately find hospitals and sanatoria for the relief of consumptives will be relatively as necessary then as now. While the fuel gases from burning fuels eat their destructive way into the texture of the lungs, and there work detriment to the blood cells and vital forces, consumption will continue to prevail among population, unless humanity will learn to as far as possible rely on a free and full supply of clean and fresh air to annul the poison of the bad. Means of treatment will never release the country from tuberculosis. Preventive conditions alone can do so. The conditions of prevention must be applied in the homes and business places and resorts of population of all ages, if they are ever substantially realized. "Dirty air is death," was well spoken. Hence again—agitate! Educate! for the sum of prevention resolves itself into the problem of teaching and training humanity to regard with reverence the protective mission of cleanly modes of living and cleanly breathing-air to preserve life.

Our advanced tuberculosis reasoners have justly concluded that consumption is not hereditary—transmitted from parent to offspring by blood heritage. In this sensible exemption there beams substantial hope for all whose relatives aforetime had died of consumption. The adoption of the bacillus idea superseded the supposed graft of lineal transmission of the disease. The fructifying seed of the father and impregnated ovum of the mother start at once the growth of a human being, but cannot also carry along a bacillus so dormant that it does not get busy for perhaps twenty years later in the offspring. Hence the dogma of heredity had to go under. However, because of the steady continuance of tuberculosis, it began to be theoretically claimed that the disease must be contagious through the media of bacilli. The rush after bacilli at once followed, and infatuating guesses on this line present a puzzle which contentious scientists do not solve. With the fading away of the resulting theory that consumption is directly caused by inhaling bacilli from dried sputa as a probable source of infection, which might account for pulmonary tuberculosis rather than for tuberculous conditions in other parts distant from the lungs, our earnest investigators began to churn the problem of foods as carriers of the disease. Though intense heat had been declared certain death to the activity of bacilli (intense heat always arrests the progress of fermentation), as for instance, in the supposed bacilli cause of typhoid fever. Pardon the digression. Typhoid has been very prevalent in Philadelphia of later years. Other excuses failing, our local Board of Health officials got in the habit of putting up the easy-going fustian of prevention: "Boil the water—cook the bacilli—boil out the doubt till our city gets filtered water." Our filtered water was coming at a cost to the taxpayers of over 27,000,000 dollars. However, neither boiling the water nor filtering the water succeeded in "cutting out" typhoid fever to any satisfactory degree in Philadelphia. To the chagrin of health officials typhoid continued in filtered water districts as before, till it has become a newspaper question whether or not the filters themselves (scummy beds that they become) are not even now causing typhoid fever. So, since filtered water after all has not abated typhoid fever, our sanitary Board of Health can only revert to its previous appeal: "Boil the water."

But let us analyze the thing. Raw water is very moderately used as a beverage in Philadelphia. Cooked foods are necessarily boiled or baked. Should not these processes nullify any infective activity of bacilli? Even the bacilli found in typhoid? Turning now this sidelight upon the continuance of tuberculosis, after the tuberculin misfits of anticipated prevention lost proofs of practical value, investigation was specially turned to the agency of foods eaten and digested by population as conveyers of tuberculosis among the human family. It was presently discerned that the milk can, the beef and pork supply contained the dreaded tubercle bacilli —doubtless always had done so. But here we are faced with the fact that civilized people in this country are not in the habit of eating their meats raw, bacilli or no bacilli. Meats, except dried beef, are boiled, fried or roasted. The milk, we will not forget, is "Pasteurized" for city trad.e So there is the end of bacilli of tuberculosis in animal foods. And yet tuberculosis continues among us. Hence many of our tuberculosians switch off from the dried sputum idea to the animal food theory, which we already see is quite as improbable in practical fact as the prevailing source of consumption.

Then milk cows, cattle in general intended for food supplies, were officially scrutinized by authorized inspectors, and general slaughter of condemned animals ordered without reserve—this ostensibly to arrest the spread of tuberculosis among cattle, also to suppress extension of the disease among humans by eating suspected meat. But behind the scene who must sustain the peremptory pecuniary loss of valuable herds of cattle and swine? Without an inspector's certify stamped upon each side of the meat, it could not slide upon the open market in bulk. Here is a significant illustrative analogy. A few days after a numerous killing of condemned cows pronounced as having been attacked by hoof and mouth disease or aphthous fever, in early winter, in two counties near Philadelphia, there prominently appeared large quantities of tallow-white or very anemic-looking sausage on sale at meat stores in this city. The price was four cents per pound below the prevailing price asked for healthy sausage. The relative cheapness of this pallid sausage secured liberal sales. One fry of it only reached my family table. Under protest of suspicion I tested it at breakfast. It was nearly tasteless, devoid of natural sausage flavor or relish, a sub-obeyance to conventualized methods. I reasoned that the chopped meat had been chemically bleached to a colorless state by antiseptic process with the idea of removing danger of disease by its use as food—then juggled to market places in the guise of lower price sausage to enhance ready sales and escape dead loss to the cattle owners.

On a par with this analysis, when tubercle-shape bacilli are discovered in the blood of an otherwise fine herd of cattle, and the inspector orders their slaughter. what do we suppose becomes of each carcass? The hide naturally gets to the tanyard for leather. The hoofs and horns doubtless surrender their stock of glue at the glue factory. The tallow will not be denied sale for tallow uses. But is it absolutely certain that the lean flesh does not go into pickle preparatory for consignment to the smoke meat house for supplying dried beef wholesale? Who is certain he does not feast on the dried bacilli at last? But yet the bones? Without boiling or burning, will not the bones be ground up, either fresh or moldy, to supply fertilizers for the tilled soil and its natural products, and the hapless bacilli thus be perpetuated? Anyway, the facile instincts of commercialism would not respond to a barefaced call for the use of slaughtered cattle and swine with tuberculous taint for building boys' bonfires! It is evident from this side-glance that if our active anti-tuberculosis champions in the field, while planning the reduction of consumption by the killing of suspected live-stock used as food, would steadfastly advance a few steps forward in regard to prevention, they would more radically and effectively erase telling lines from the dismal blackboard of the nation's scourge. In so far as our flesh food supplies are questioned, that forward step means to compel owners of cattle, swine and poultry, even by legal process, into honest compliance with strictly sanitary defense of the public health by increased attention to the sanitary conditions of their live-stock and poultry before killing. This advance against tuberculosis in live-stock to cover more cleanly modes of keep, to include less filthy and overcrowded means of transportation by railroads, by insuring purity of foods and drink consumed by the animals, by preserving purification and ventilation in stabling, by every consideration for the meat supply that naturally promotes sound health in the human. Only through the beneficence of foreordained safety in animal foods can the blood of the human be protected against infections.

Animal bodies, the flesh of fowls, suffer as much occasion to become tuberculous from dirty, densely filthy conditions of environment by day and by night, as, comparatively, as have human bodies. This problem is not half so much a matter of contagion as it is a fact of co-existing and compounding unsanitary eating and breathing—both of the human and of the flesh food makers. Because of identity or similarity of habits and environment, entire families may be crucified by tuberculous infection or degeneration, self-developed. The most thoughtless argument that I ever heard of was advanced by a stranded talker at the late Tuberculosis Congress at Washington, D. C., who proposed the theory that cattle had contracted tuberculosis from mankind, hence the disease was alike in both. He would have kissed the hem of truth if he had asserted, for argument's sake, that tuberculosis is auto-developed in both the animal and the human through circumstances of unsanitary or degenerating breathing-air.

These important cognate considerations bring us again to this International Exhibition. It is strikingly evident that display of animals is here an unusually prominent feature. The Live Stock Sanitary Board of Pennsylvania exhibits so many evidences of tubercular conditions in cattle and in swine that one feels like revolting against animal foods and turning to straight corn meal, rice and vegetables for regular full diet if safety for life is to be timely consulted. After studying the tuberculosed udder or milk gland of the cow, tuberculosis of the fallopian tube, the uterus, I can never try to enjoy another glass of cow's milk. The hog seems specially subject to tuberculosis. Why not? When hungry, rooting through excremental filth for stray unmasticated and undigested grains of corn passed intact through intestines at previous feedings. Swill of all sorts poured into their troughs for drink to satisfy thirst. Confined to pens reeking with their filth during the process of "fatting" for slaughter. Why should not every hog raiser be compelled by law to study the sense and practice of sanitary care with his live-stock to prevent diseased meat and to protect the welfare of humanity?

Examples of tuberculosed lung of cow, also of liver, also of organs of calf, need not be wondered at when we visit many farmers' and certain other dairymen's manure-laden cattle yards and stables, and there realize the unwholesome environment, the infested local air breathed by the cattle. Theorists talk about making cattle immune against developing tuberculosis. But under conditions that I have repeatedly seen, the pretentious inoculation of cattle with commercial serums to render them immune against natural results of unsanitary conditions must ever prove a conventional farce. And the influences of food furnished to live-stock cannot be ignored. Degenerate foods make degenerate meats. How could it be otherwise? When animals hunger they have no choice. Even fermenting refuse will be eagerly swallowed by them. City slop wagons carry away indescribable combinations of refuse collected along back alleys. It is known that instead of being incinerated, much of this disgust is shipped to outside of city limits to regale herds of swine as food—as though anything is allowable to relieve the hunger of animals that presently furnish meats for tables by way of the markets. "The blood of the body is the life of the body." It requires wholesome food to maintain healthy blood in man or beast.

While splendid efforts are being made to care for poor consumptives, and to abridge the spread of consumption, the work has only begun. The increasing number of sanatoria, with their often excessive rigor of rules for open-air sleeping, even in cold weather, are not yet materially reducing death totals. The radical sanitary training of self-defense must be done at the homes of population. Agitate—educate—arouse public interest, enlist public aid, unite the civilized world into a common brotherhood of sanitary co-workers for the prevention of conditions that naturally breed tuberculosis, and the scourge must and will lose its insidious grasp on humanity. Educate! Let every one learn to understand and realize that the conditions of the lungs are mainly gauged by the qualities of the air breathed by them. Philadelphia mortality report for week ending February 27, 1909, shows eighty-five deaths due to pneumonia, and eighty-five deaths from consumption—one hundred and seventy deaths by lung disease in one week out of a total of 569 from all causes inclusive. Through municipal co-operation immense throngs are visiting this International Exhibition—thousands daily. The crowds indeed are often unfortunately too great at once to allow a reasonable chance of observation and study—visitors impelled to hasten along to make room for the crowd behind. The tri-daily course of

lectures delivered in the auditorium represents the best practical thought of many eminent men who are authorities on tuberculosis. GEO. B. H. SWAYZE, M.D.
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RETROSPECTIVE

A New Law Defining Medical Practice is advocated in the annual report of the Massachusetts State Board of Registration in Medicine, in which it is stated that just what constitutes the practice of medicine or holding onesself out as a practitioner of medicine is clearly set forth in the medical practice laws of nearly all other States. Such definitions are recognized as being most important; for possible misinterpretations of the intended meaning of the law are thereby avoided, the administration of the law is simplified and is more certain as to results, and motations of it are less likely to occur. The following new section amending chapter 76 of the revised laws is earnestly recommended: "Persons shall be considered, irrespective of methods of practice, as practising medicine within the meaning of chapter 76 of the revised laws who shall assume or offer to assume the responsibility of determining the nature of disease, deformities or injuries of the human body, having in view the treatment of the same for the purpose of cure or alleviation."

Influenza and Influenzal Pneumonia.—D. J. Davis (Arch. Int. Med., Sept., 1908), finds that in many epidemics of clinical influenza or grip, the influenza bacillus plays little or no part as an extiological factor; these epidemics appear to be due to a variety of organisms, the pneumococcus, the streptococcus catarrhalis and pyogenes and the micrococcus catarrhalis being those most commonly found. An organism morphologically and culturally identical with meningococcus was found in one case. The influenza bacillus is often found in so-called influenzal pneumonia, but not in all cases; it cannot be considered the primary cause. An abundant bacterial flora is characteristic of the respiratory secretions in these cases. Influenza bacilli are commonly found in a great variety of infections; experiments on both animals and human beings demonstrate their pathogenic properties; they are often or at least sometimes non-virulent as they occur in the secretions. As secondary invaders they undoubtedly influence other primary infections unfavorably.

Dirt and Cleanliness.—Prof. Wm. T. Sedgwick, in his recent lecture on "Sanitation" in the College of Physicians and Surgeons, declared that the two greatest services of the nineteenth century have been the discovery of dirt and the invention of cleanliness. "Dirt was an unknown quantity fifty years ago. Any man or woman brought up in this country fifty years ago will tell you that, for dirt had not been generally discovered even at that late date." Personal cleanliness had indeed arrived for the better informed and the well to do; and streets were often cleaner than they are in some places to-day. But water supplies were still almost everywhere dirty, milk supplies were altogether dirty, sewage was defective and ventilation wholly unknown. Until the great pathological discoveries were made that certain diseases are parasitic in origin, and that dirty water, milk and other foods are the readiest while for such parasites, very little progress was made. Dr. Sedgwick began by sketching the sanitary condition of England in the thirteenth century; the inhabitants were but little removed from the beavers which then built their dams in the Lincolnshire Fens and other waste places. In London—already a populous city—the streets were made of loam covered with rushes which harbored all kinds of filth, and were only removed every twenty years. The houses, made of wood and plaster, had dirt floors strewn with rushes which were swept into the street when they had become so encumbered with refuse as to have become unbearable in the house. The people lived mostly on salt meat; fruits and vegetables were practically unknown; bathing was rare; sanitation was not thought of. Dirt prevailed everywhere and bred smallpox, typhus and all kinds of malignant skin diseases, which were indiscriminately called leprosy by the quacks of that time. There were no physicians for the poor. The monks went from house to house, to smooth the path of the dying to the next world, not to bring them back to this. Life was hard for all, the patient in his hut and the lord in his bare, uncomfortable castle close by. No lights were burned at night. Even in the sixteenth century no great progress had been made from the time of Julius Ceasar. Filth still reigned supreme; and the odors from the Fleet ditch, that flowed through London were so powerful that they overcame the perfume of the incense burned in the churches upon its banks. The death rate was one in 23; highwaymen infested the streets, and the coast swarmed with pirates. After the Great Plague and the Fire of London in the reign of the Second Charles officers were appointed to look after the public health; to see that the streets were made wider and the houses more substantial. These were the first English health officials; and they did not remain long in office. In the beginning of the nineteenth century children were sold like slaves to the mills and worked sixteen hours a day, including Sundays. Tea was five dollars a pound; whiskey twenty cents a quart; bread was a luxury; turnips were served as a dessert. These were the good old times which some profess to regret, when there were no health officers and no precautions such as municipalities take to-day for stamping out disease.

Flat Foot.—The important factor in the rational treatment is the correct diagnosis of the foot conditions as well as of the complications which may be present in the other joints, believes R. O. Meisenbach (Am. Jour. Surg., Sept., 1908). We can diagnose the foot error only by the complete study of each case. The general joint diagnosis has a direct bearing upon the treatment of the foot. Many so-called cases of rheumatism are really static foot errors. The so-called rheumatic diseases in children with symptoms of growing pains are often, in reality, foot errors. In the acute cases the many diffuse pains sometimes called neuritis, but which have not been helped by its treatment, are often due to joint strain; much of the nervousness in these patients disappears after they have been made to walk straight. In cases of actual chronic joint lesions much irritation can be removed

by correction of the feet. In treating the fault we should seek to remove the cause rather than the symptoms; a permanent cure should be aimed at with the idea in mind of the future usefulness of the foot.

Radium.—Sir Frederick Treves, in a recent lecture, warned his hearers not to be too sanguine regarding the power of this element. It would cure every form of naevus—the port wine stain, the pigmented mole, the hairy mole; in a case of angioma of the eyelid, the size of a plum, which had been twice excised and twice cauterized, a cure was effected without pain or discomfort. Another angioma, extending over nearly one side of the face was also cured; as also a fibrous angioma, the size of a hen's egg in the tissues of a child's arm, which was dispersed within a month. Applied on varnished silk radium almost immediately removes permanently the itching of eczema. Radium could cure rodent ulcers which had existed for years and against which the Finsen light and the X-rays had been quite ineffectual; it had apparently, moreover, cured epithelioma of the lip, tongue and cheek. The secret of its successful use lies in the extent of surface required—a little radium spread over a wide area is more powerful than a solid bead of it. Dr. Treves had been informed that after a solution of deposit from the emanation had been injected into a mouse in which abdominal cancer had been artificially produced the cancer vanished. As to the lines which future investigation must follow regarding the therapeusis of radium, we must ascertain the action both of the rays and of the emanation on bacteria and their products. Then the selective action of this powerful element on the tissues must be investigated. Extreme caution must be exercised in speaking of what radium is going to do, else disappointment is sure to result.

Laryngeal Tuberculosis.—G. Fetterolf (Med. Rec., Jan. 23, '09), urges examination of the larynx in every actual or suspected case of this disease; thus would much suffering and life be saved. Regarding voice change, a slight rotation and twisting of the head toward the torticollis position is to be noted; this is usually to be associated with a cicatrized and arrested tuberculous lesion of the voice-producing apparatus, though this lesion, even in the tuberculous, may be due to hysteria, asthenia or syphilis or to mechanical interference with the inferior and external laryngeal nerves. Cough is not an essential symptom; if this is present and is harsh, throaty in quality and unproductive or out of proportion to the amount of sputum there is present more or less laryngeal irritation. Large infiltrations of the arytenoids will be characterized by a tubular voice quality. Not much can be learned from the sputum. The following history should at once awaken attention to the larynx: A fulness and dryness in the throat on awakening, frequently associated with retching or even vomiting, until a discoidal mass of inspissated mucopus, dark, hard and dry on one side, and yellow, green, sometimes moist, on the other is coughed up. Blood in the sputum is rarely from the larynx. Pain is the most serious symptoms, and the one on account of which the laity consider "throat consumption" so terrible a disease; pain during deglutition indicates an advanced epiglottic lesion. Dysphagia is rarely present, except when associated with pain in swallowing. Dyspnoea may occur early or late. The tonsils, pharynx, etc., should also be carefully examined. The personal equation must also be considered; for the symptoms are elicited from the patient, not from the disease.

The Origin and Condition of the Peoples who make up the bulk of our immigrants at the present time and the probable effect of their absorption on our population, is the subject of a vital paper by M. H. Simons, U. S. Navy (Military Surgeon, Dec., '08), who discusses the evolution of man and his gradual distribution over the earth, the formation of races, the effect of crossing, etc. A cross between black and white, white and yellow, yellow and black, and black and red, usually inherits the bad qualities of both, but few of the good qualities; it is not favorable to longevity or to desirable mental qualities. A mixture of varieties of a race, not of races, is necessary for the preservation and stimulation of the mental and physical qualities which insure the steady advancement of a people. To insure the development of the best American type not only the physically and mentally desirable must come in; but their habits, modes of thought and state of civilization must be readily assimilable with ours. Simons finds it a pity that the legal assumptions and responsibilities of manhood are not now marked by some ceremonial, such as was formerly practiced by candidates for knighthood, or for admission to the warrior class among American Indians; for the preparation to this end tended to foster such moral forces as self-restraint, tenacity of purpose, and devotion to high ideals; he would have marriage restricted for the mentally, morally or physically defective or perverted. The admission of immigrants to overcrowded tenements is a danger both to themselves and to others; they should be diverted to the country or to districts sanitarily fitted for them. The sailor formerly lived healthily in the open; he now lives in a steel fortress, artificially lighted and ventilated and much overheated; tuberculosis and infectious diseases are therefore now common in the navy. Simons ascribes the frequency of desertion to defective moral development.

Bee Stings for Rheumatism.—E. T. Burton (Brit. Med. Jour.) was suddenly attacked with acute arthritis of the right hip, as suddenly succeeded by sciatica of the same side. After several weeks of ineffective treatment the "bee sting cure" was begun. Seven of these insects were applied in the course of the sciatic nerve and round the hip joint. When the patient awoke in the morning he was able not only to turn in bed but also to get out without hauling himself up in agony by the bedpost; and he walked across the floor without limp or pain for the first time in three months. Returning to bed at once he had another half dozen bees applied, dressing at noon for dinner; that night another half dozen, and two days after a repetition of the process. He thereupon walked well, and even ran some fifty yards without pain. Some ten days after he was absolutely free of the slightest twinge. Burton, who is 67 years of age, had been a rheumatic subject for twenty-five years.

Mentality of the Aged.—To the clinician (remarks the Jour. des Praticiens, Dec. 19, 1908, editorially), the characteristic most noticeable in elderly people is their lack of sense of "perspective," which may be better rendered "proportion."

The old person becoming ill will scarcely realize the infinite distance which lies between the pain of his tooth, his feet, and his chief disorder, which will in so short a time, it may be, remove him from this earth.

"An aged person," says La Bruyère, "is proud and captious, and difficult to deal with unless possessed of a sympathetic nature." The editor continues with the same question as to the justice of so summary a view. Old people are apt to show indifference to all lying beyond their daily routine, and may be slow to appreciate the needs of others. They are full of little humors and peevish, too.

Early Diagnosis of Paretic Dementia.—Raymond (Jour. des Praticiens, Dec. 19, 1908) believes that upwards of fifteen years before the signal outbreak of this disease, one may discern symptoms of warning. And treatment in the early stages is of better prognosis. The acute clinician notes disorders of memory, and these are followed by trifling or transitory epileptiform seizures, feelings of anesthesia limited to one or more extremity, or sensations of giddiness, attacks of the so-called Bravais-Jacksonian type. One now observes some interference with the reflexes, one or more of which may be diminished or absent. The reaction of the eye to light is impaired or lost. The accommodation reflex is retained. Transitory diplopia may occur. Romberg's sign may be found. And a slightly increased arterial tension. Raymond advises a milk and vegetable diet, iodide of potassium in very small doses, and vaso-dilators. (The translator finds the nitrite group efficacious.)

Appendicitis Misunderstood.—Under this caption Guinard (Jour. des Praticiens, Dec. 19, 1908) discusses with some feeling the treatment of cases of obscure abdominal pain, and in the beginning he appeals to us to follow the rule laid down for all laparotomies, namely, to take that opportunity of removing the appendix regardless of the cause of surgical intervention. This rule works out to the advantage of the patient.

Many cases come to mind in which the surgeon, on examining the patient, is impressed by some gross lesion, such as an ovarian cyst, or a uterine fibroma. He assumes that this evident neoplasm has been the direct offender, and attributes all the suffering of the patient to it. Removal, however, does not relieve the symptoms. A slight post-operative hernia is suspected. Further treatment along this line still leaves the suffering of the patient to mock the surgeon, who sooner or later discovers a latent or chronic appendicitis.

To Americans the remark, entirely aside, by Guinard, in speaking of regular treatment, may cause some interest, for he mentions rest in bed, ice, and opium. Deaver, of Philadelphia, and others, do not care for opium in so far as by its masking symptoms we are deceived and misled.

Guinard quotes Achard, who says that the discovery of a gross lesion, like the sun, may blind us to the stars. We should not blame a cyst for the pains of the patient unless we can include other possible causes. Many instances of cysts or fibromas existing for years without suffering, come to mind.

Diabetes and Pituitary Body.—Classical works give this no attention, and at the present writing the obscure nature of the cases of diabetes due to changes in the pituitary body require careful study, says Debove (Jour. des Praticiens, Dec. 12, 1908).

The studies of Parlesco (Paris, 1908) show that death follows total removal of the pituitary body of the dog. Glycosuria follows injections of substance of this gland, according to Borchardt. Debove relates at length the case which forms the basis of his discussion, a case in which the symptoms of diabetes (polyuria, thirst, hunger and emaciation), were followed by optic symptoms indicating a neoplasm impinging on the optic tract. With rapid obscuration of the vision, hemianopsia, pupilary reflexes diminished, dyschromatopsia and headache.

Antispecific treatment consisting of grams 0.0001 cyanide of mercury and a solution of potassium iodide was at once ordered. The speedy recovery of the patient seems to show the correctness of diagnosis. Debove adds several interesting references to the case of Sainton and Rathery, myxedema while at necropsy he discovered a cyst of the pituitary body as large as a small orange. The facts known about total or partial removal of the pituitary, and the facts concerning acromegaly seem to prove the purely symptomatic value of glycosuria and the nervous origin of many diabetic symptom complexes.

Zona, or Herpes Zoster and Its Etiology.—Our views upon the pathology of this dermatitis are unsettled. Erb appears to have determined its true infectious nature.

The peculiar nervous alterations noted by Jeanselme (Jour. des Praticiens, Dec. 12, 1908) recall the studies of Dana and Hunt.

Editorially, injections of scopalamine hydrobromate are advised for very painful eruptions.

Injections of alcohol, according to Jeanselme, are to be employed cautiously; indeed, the less treatment one gives to the irritated and irritable skin the sooner recovery ensues. Salicylate of sodium is advised.

Chauffard has shown that there is some irritation of the spinal axis and of the roots, in all probability. Brissaud, construing the individual upon the metameric theory, defends the argument of medullary involvement chiefly.

Cytologic Study of Uremia.—Mosny and Pinard (Jour. des Praticiens, Dec. 19, 1908) report finding polynuclear and lymphocytes in the cephalorachidian fluid of a mild case of uremia, one not accompanied by convulsive seizures. The deduction is that this reaction is a sign of meningeal hemorrhages of minute, or histologic, extent.

It is probable that some coincidence of saturnism, syphilis, or meningeal congestion due to the excitements of convalescence exists.

De Massary reports the case of a man of 43 whose uremic convulsions produced a reaction of ¾ polynuclears to ¼ lymphocytes. Nobecourt reports negative appearances in two cases of uremia due to scarlet fever.

The practitioner must look well to his interests or he will be sharply dismissed for neglect to inquire about some sore tooth, or toe, on the day after having saved the patient in a uremic or cardiac attack.

Cheyne-Stokes Respiration not Fatal.—Freuel of Crillon in Oise (Jour. des Praticiens, December 19, 1908) reports a case showing that prognosis need not be absolutely fatal when cheyne-stokes breathing occurs.

This case presented enlarged liver, together with renal and cardiac insufficiency. Attacks of uremia, accompanied by unconsciousness, relieved each time by heroic treatment, and by considerable suppression of urine continued to exhaust the patient, but Freuel employed with success, theobromine and digitalin, squills and scammony, dietary restrictions, and ether and oil of camphor in acute attacks. Treatment of digitaline, milk and lemonade is very effective, between attacks.

Scleroderma is treated by sulphur baths, and administration of arsenic and iodide of potassium. Electric treatment, as hydrofaradically applied, is commended by Sanchez. (Jour. des Praticiens, Oct. 31, 1908.)

The third and the seventh cranial nerves may be selected for paralysis.

The fever, with its concomitant albuminuria, the epidemic form at times signalized, and the absence of recurrent attacks point to infection with the elaboration of anti-toxin.

Some cases of Pott's disease, cancer of the vertebral column, or tabes, and general paralysis, may cause injury of the spinal axis with herpetiform eruption.

Never use wet applications, for the epidermis resents all such in its macerated condition. Use dry and relatively inert powders, oxide of zinc, for example. (We suggest stearate of zinc as very acceptable.)

The Hyperemic Method Again.—Currents of hot air are advised by Dausset and Laquerriere (Jour. des Praticiens, Dec. 12, 1908). They state that the motion of the air must be rapid to prove efficacious.

Neuralgia, rheumatism, eczema, hydrarthrosis, and superficial areas of suppuration, the latter responding very promptly, are benefited. In dermatitis due to radium exposure a rapid improvement follows the hyperemic reaction.

[Bier's method is widely experimented with today. To-morrow may witness some reaction in sentiment. The question of true physiologic therapeutics is most vital to us. We ought to recognize the importance of striking at the source of morbid changes, and avoid any merely symptomatic methods of treatment. Any means of increasing the strength of the individual and drawing upon self recuperative powers is to be encouraged.]

Insomnia Due to Syphilis.—Schoult, of Nice, (Jour. des Praticiens, Dec. 12, 1908) tells us to suspect syphilis in any case of obstinate or relapsing insomnia. The patient, quite commonly may be unable to give any specific history. Look into the facts of the sleepless intervals. It is probably periodic, and reocurring at some definite hour, although this may have some variation.

Heart Disease, Increase of Arterial Tension, and Use of Extract of Pituitary Body.—Louis Renon and Arthur Delille (Jour. des Praticiens, Dec. 12, 1908), in the course of an excellent paper as entitled, emphasize the need of instruments of precision in appreciating the state of arterial tension. (It is astonishing how few clinics employ such instruments as a matter of routine.)

Extract of Pituitary can not yet be taken as an alternative to digitalis. It is valuable in toxic infections during typhoid fever, pneumonia, grippe, diphtheria, etc., acute myocarditis and especially when this last is accompanied by lowering of arterial tension and diminished quantity of urine.

Dictation Exercises in Abulia and Other Psychoneuroses.—Commenting on the disinclination to read and write, observed in mental cases which are progressing unfavorably, Berillon, speaking before the Society of Medicine in Paris (Jour. des Praticiens, Dec. 12, 1908) advises us to give our patients dictation, the writing down of which will gradually reinforce the motor centers. The cessation of reading, for cultivated minds, is not only a sign of weakening will power and lowering of attention, but in itself results in further impairment of will.

Possibility of Rheumatism Being Due to Tuberculosis.—Ozenne, continuing the discussion before the Society of Medicine in Paris (Jour. des Pratiens, Dec. 12, 1908) opposes the view of Poncet, who believes in a non-specific form of rheumatism, one in which the bacillus of Koch cannot be recovered, and a rheumatism due to the effects of that germ.

Ozenne demands proof. [The nature of parasyphilitic disease may be taken as indicative of the ideas of Poncet in his thesis, which implies paratuberculous morbid processes acting to produce the rheumatic syndrome. Cellular pathology must be called upon.]

Politics and Medicine.—The editor of the Jour. des Praticiens (Dec. 12, 1908) deplores to-day's tendency of choosing politicians to preside over medical meetings, especially those marked by banqueting.

Of course, the distribution of medals, he continues, is an important fact. But a scientific society is supposed to exist for discussion of serious topics, and not to aid in procuring decorations for one's acquaintances.

What would be the effect of a renunciation of this custom of inviting political men to such banquets? How would it be if the centenary of the Society of Medicine of Paris should be signalized by the absence of all but scientific men?

Method of Fulguration in Treatment of Carcinoma.—Bizard (Jour. des Praticiens, Dec. 12, 1908) reports the case of a man of 43 whose cancer in the rectum was much diminished following local treatment. Since the growth had been pronounced quite inoperable, the surprising success of electric applications of high frequency deserves mention.

Suicide by Sugar.—A Porto Rican in jail for an alleged theft of diamonds in San Bernardino, Cal., attempted slow suicide by rubbing sugar into his eyes. When his purpose was discovered he explained that in his native island the custom of using sugar prevailed among those who desired to shorten their lives, and that it invariably proved successful.

MISCELLANY

Five Million Dollars' worth of quinine are estimated to be consumed annually throughout the world.

Insects and Leprosy.—A combined Danish and French scientific expedition will visit the Danish West Indies in an endeavor to determine the part played by blood-sucking insects in the spreading of leprosy.

A Tablet Giving off Oxygen.—A French chemist has invented a tablet which, dissolved in a glass of water, will give off as much oxygen to clarify the air in a room as though a window had been left open for an hour.

Sanitation in Costa Rica is, altogether, unlike that of the other Central American States, so excellent that the Canal Zone physicians have concluded that Zone employees may, if they wish, spend their vacations there. The Costa Ricans are especially proud of their clean streets.

Medical Certificates Not Accepted.—The Court of General Sessions of New York City have recently decided that too many doctors have the habit of certifying to the inability of witnesses and defendants to appear in court; and that hereafter the doctor signing the certificate shall be required to come to court and to tell under oath the circumstances under which he made out the paper.

Tuberculosis Among the Negroes was under discussion at the recent annual Tuskegee Conference. Among the subjects selected for special consideration were: Getting rid of the one-room cabin; building good schoolhouses and better churches; the importance of keeping out of debt; the extension of the school term, good public roads, prompt payment of taxes, especially the poll tax; securing of homes and lands; and making agriculture attractive.

The French Birth Rate now, for the first time in many years, shows an upward tendency. For the first six months of 1908 there was a considerable improvement on the figures for the like period of 1907, when the deaths exceeded the births by 55,007. In the period first mentioned the berths have exceeded the deaths by 11,066. The difference is not due only to the fact that the death rate was lower, but also to a net increase of 9,000 births. The marriages for the first half of 1908 numbered 162,495 as against 154,081 in the same period in 1907.

The Effect of Sea Air was recently shown by M. Laumonier, at a meeting of the French Therapeutic Society, to be quite different on the coast from that of the open sea, twenty or thirty miles out. On the coast the effect tends toward excitement and congestion; it is more irregular in its action. Out at sea it is tonic and regulating (equilibrante); in addition to which the patient gets a quiet, regular life and a continuous bath of pure air. These advantages are very evident on a sailing vessel; but are not so patent aboard great liners, on account of the vibration and the smell of the engines.

All Ovarian Tumors should be removed early (W. S. Gardner and S. McCleary, Surg. Gynec. & Obst., Dec., '08), because primary carcinoma of these organs usually begins in a benign growth and an early operation removes a prolific source of malignancy. Even when the malignant process has progressed considerably there is excellent hope of a complete cure. Ovarian tumors should be removed through an abdominal incision long enough to allow the tumor to escape without breaking the cyst wall; we must return to the "major incision," such as J. Bland-Sutton strenuously advocated.

Nervous Dysmenorrhoea may not demand local measures, but general treatment addressed to the nervous system, combined in some instances with the correction of causative abnormal conditions in the nose. J. Veit (Münch. Med. Wochensch., Nov. 24, 1908) determines, in all virgins with dysmenorrhoea, the possible existence of neurasthenia; and if this is present to direct treatment to it, with removal of any diseased conditions in the nose. If such treatment has failed an examination of the genitals should be made (under anesthesia preferably), and any existing local conditions relieved.

Doctors Without Study.—At a recent meeting of the Society of Medical Jurisprudence, Dr. A. W. Herzog (who is also a lawyer) declared that pretty much anyone who does not resort to surgery may doctor his friends and the general public without having gone to college or medical school. "It has come to pass in New York State that we have practically no medical law, and I can show anyone who has not had a day's study in a medical college just how he can practice medicine in this State provided he doesn't use a knife." Dr. Herzog classed Christian Scientists, Emmanuel Movement promotors, Osteopathists and "water cure" experts together, and emphasized that they were not physicians, though they might profess to practice medicine.

Asystole in Children.—A. Moussons (Ann. de Medic. et Chir. Infant., Jan. 1. '09), finds in the localization of the disturbances in the liver and the more rapid course the characteristics distinguishing asystoly in children from that of adults. When there is a pericardial adhesion the liver dominates the syndrome to such an extent as even to divert the attention from the heart. Deflective function in the liver and the hampered portal circulation occasion serious digestive trouble; ascites results. Repeated punctures may relieve, and may prolong life a year or so; some cases have survived eight to ten years. The rheumatism or tuberculosis responsible for the asystole in the first place adds its injurious action on the peritoneum; and the child is liable to fall an easy victim to same intercurrent inflection.

An American Hospital in Paris, rendered necessary by the scarcity of good French hospital facilities, and the formalities required for Americans to gain admission to such as exist has become a reality through the generosity of members of the American colony. Two adjoining villas at Neuilly, a Parisian suburb, have been purchased and transformed into a perfectly equipped modern hospital, consisting of a free consultation room, two wards, each with seven beds, and eleven private rooms. There is a spacious garden in the rear, where it is intended eventually to erect two or more additional pavilions. The institution is designed for all classes of the growing American colony—students, artists, and business men—and will be available for American tourists. Charles Knight is the architect; John H. Harjes is President of the Board of Directors.

THE PREVENTION OF SOCIAL AND VENEREAL DISEASE.

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THE recent medical literature has contained a number of articles dealing with the instruction of the young in sexual matters, the protection of innocent women from venereal infection in the wedded state, and the general subject of the prevention of the social evil and of the prophylaxis of venereal diseases considered simply as infections. Keyes, Kelly, Valentine, Morrow, Bulkley and a number of other well-known medical men have discussed these problems, and almost, if not quite, as able articles have appeared from men who would scarcely claim more than a local medical reputation.

While the problems have neither been solved nor brought to an ultimate irreducible condition, these various articles are of practicable value and have served to impress the medical profession with their obligation to society along educational lines and along the line of individual influence and discipline. Comparing this recent literature with similar writings of a decade ago, a distinct advance is apparent. On the one hand, the strictly scientific writer has not hesitated to adopt also the viewpoint of the moralist and to realize that the only sound basis for morals is religion. On the other hand, the moralist has abated the early conception of disgrace and venereal suffering as a righteous retribution for sin and has come to regard the matter with a saner allowance for human weakness in regard to physiologic appetities. So, too, the sociologist has learned to take a more merciful view of the prostitute and the libertine as individuals who have simply carried almost universal attributes to an extreme, has learned from sad experience that legislation cannot make people good, and has learned that sociology must lean upon moral and hygienic facts. Or, rather, no one man attempts to separate the medical, moral, religious and social problems involved, but, to whichever his attention is particularly directed, realizes that each is a phase of a common unit.

We still note a tendency, in such writings, to follow the established custom of gallantry toward women, in the more or less explicit opinion that sexuality is a distinctly masculine characteristic and that the object of this crusade is the preservation of feminine virtue. On the other hand, there still remains a vestige of the old belief that any falling from grace on a woman's part leads pretty directly to the career of a prostitute, and that the prostitute herself is to be regarded as a social ulcer, to be eradicated without mercy by almost any means short of actual murder, and not worthy of consideration on her own account.

We must confess to holding somewhat heterodox views on various phases of the problems involved. First of all, in point of logical sequence, we question whether there is much difference in the sexual tendencies of men and women. In each instance—barring perverted practices—there is one man and one woman involved. In the sum of all instances, there must also be an aggregate equality between the guilt of the two sexes. Reliable statistics as to auto-eroticism or homosexual perversions are an impossibility, yet it is certain that the female sex is a frequent offender in these regards. Unquestionably, there are numerically more female than male virgins and less violation of the marriage vows by women than by men. This is self-evident, from the very existence of prostitution as a feminine occupation and by the almost absolute lack of male prostitutes. Yet male virginity and marital purity are by no means rare—three out of five students in a private quiz class had lived chaste lives—and we count among our personal acquaintance many physicians, patients and lay acquaintances who give the same history—while female unchastity, outside of the class of prostitutes, is certainly fairly common.

A friend once stated that he could see no use for the existence of prostitutes. We replied that, while agreeing with him from the moral standpoint, they seemed to be an inevitable evil, in the present constitution of society, but our argument was cut short with the explanation that he had never found any difficulty in satisfying his desires without recourse to this class. Now, while such an attitude is cynical and pessimistic, it is too well supported by experience to be regarded as untrue. Many men, without the slightest moral sense, regard the brothel simply as a convenience in an emergency, like a hotel when one is in a strange city, remote from home and friends, and many others have recourse to it because they have the rudiments of a sense of morality that prevent their preying upon the weakness of society.

Even in the strictly physiologic sense, we question whether there is a great disparity between male and female sexuality. Unquestionably, many women are lacking in passion; physicians see much domestic infelicity and social tragedy due to this fact. But passionless men are by no means rarities, and we also occasionally see precisely similar wrecking of homes due to this opposite condition. A great many women, when questioned by physicians, deny the existence of passion. In the case of respectable women, this is often on account of tradition and is a direct violation of the truth. Prostitutes, surfeited with sexual attention, often maltreated by their "customers" and subject to irksome discipline in their houses and to social ostracism without, often incapacitated by disease and want, may frequently truthfully deny the existence of passion. Conversely, men often assume a sexuality really lacking, on account of a false pride, due to the opposite phase of the same social tradition which assumes that sexuality is a masculine attribute while it is not "nice" for women to have it.

It must also be considered that the sexual desire in males is not altogether due to passion but to an accumulation of a secretion whose discharge gives rise to the same sense of relief as a passage of the bowels or a voiding of urine. Popular ideas to the contrary, there is no analogous accumulation in women, of a strictly sexual secretion, ovulation being an entirely independent process. Thus, whatever desire for intercourse exists in the female is purely erotic.

We have stated these propositions, with no intention of upholding sensuality or of belittling the civilized reverence for the female sex or of excusing seduction. On the contrary, we believe, not that the standard of female virtue should be reduced to that which a lax social precedent requires of the man, but that male continence and purity should be esteemed just as highly as female virtue. Instead of confessing that he is a virgin, a man

should glory in the fact, and not only be proud of it in private but feel assured that his companions will share his pride.

One of our friends was seduced as an innocent boy by a teacher who deliberately kept him after school for the purpose. We believe that such a woman, taking advantage of the tender years and ignorance, if not absolute innocence of a charge, should be dealt with by society and by the law, precisely as if the sexes had been reversed. In another instance, a lot of well-grown girls took a boy scarcely more than a baby into a secluded place and deliberately exposed him and violated the innocence which he ought to have retained, even according to present standards, for several years. These are not common occurrences, and yet they are very far from being phenomenal. If we reverse the sexes, there is no community composed of men alone who would not regard the offenders as fit subjects for lynching, or at least for summary legal punishment, unless the very plausible plea of insanity was advanced by some humane physician.

We fail to see that childish innocence and purity is any different in the two sexes nor that the law should protect the immature girl and not the boy, and we certainly can not boast of a gallantry extending so far as to excuse the mature woman who deliberately violates the sanctity of a boy's modesty. Even if it be granted—as our present laws and customs apparently do—that sexual virtue is a purely feminine desideratum, it is short-sighted to overlook the obvious fact that a man cannot be impure without contaminating womanhood.

We would scarcely go so far as Elbert Hubbard in asserting that there is no such thing as seduction, and that all sexual immorality is a matter of mutual attraction and gratification, yet we do believe that his cynical view is more nearly correct than the extreme view that every girl and woman is pure until she is dragged down by the deliberate deviltry of man. In sexual, as in many purely social matters, a certain amount of initiative devolves upon the man, yet in many instances this initiative is purely conventional, and in not a few there is an actual reversal of the commonly accepted conditions.

Another heresy to which we commit ourselves is in regard to prostitution. Not every immoral woman becomes a prostitute, any more than does every indulger in alcoholics become a drunkard. On the contrary, a surprising number of women retain a good social standing while adhering only to the somewhat lax standards of morality commonly supposed to pertain to men. There is a curious sort of free masonry among such women and between them and the men to whom they are attractive. As one of them tersely put it, they have reputations even if not character. And in justice it should be admitted that sexual looseness, either in men or in women, is not necessarily incompatible with probity and industry and other virtues which go to the uplifting of human society.

There are also women who preserve a state of virginity with no true conception of what virginity should mean but simply in the commercial spirit in which one refuses to invest a valuable asset until assured of proper return for the investment. At times the virginity is preserved only in the strictest, anatomic sense, while every rule of propriety is violated and every form of sensuality which does not result in physical lesion is indulged in. And, as every general practitioner of medicine knows, there is nothing filthier than the speech of some perfectly "respectable" women, as instanced at obstetric cases when a mere man is either engrossed in scientific and humanitarian problems or is actually impressed with the dignity and sublimity of womanhood and reproduction.

But if womanhood is too often degraded among the "respectable," neither is it entirely extinguished in prostitutes. While such women seldom give such an account of a betrayal as the theorizing of the moralist, exemplified in the melodrama and the problem story, might lead us to expect, they are not lacking in human kindness, a sense of honor in the broad meaning of the word, nor are they necessarily filthy in mind and body. Neither is their life gay, but, on the contrary, even if we exclude all sentiments of remorse and wounded self-respect, it is sordid, lacking in social pleasure, subject to insult and brutality, to a strict discipline in a brothel and to harassing anxieties in private rooms. There is a constant and well-founded dread of venereal disease and the results of abortion, and, even aside from these occupational dangers, fire, violence and suicide claim many victims. Alcoholism and other drug addictions are common, not only on account of neuropathic taints and associations, but on account of the almost justifiable desire to enjoy oblivion and mental alienation from the environment. Many such women show a pitiful yearning for affection and friendship, especially from a man. Many contemptible men take advantage of this to secure support in relative idleness. Decent men, coming in contact with prostitutes in professional or business dealings or having an acquaintance with them antedating their fall, would like to respond to this craving for sympathy and companionship, but how can they?

We cannot conceive of any infirmity, grief or misfortune that needs comfort and sympathy and help quite so much as the life of the prostitue, and we rebel instinctively at proposed social reforms that would inspect and tag such women like cattle or would confine them and confirm them in their present environment or that regard them as a negligible impersonal factor, from which other human beings are to be warned and rescued. And yet, it is impracticable to be humane in any wholesale attempt to restrict and prevent the social evil. We can never satisfactorily reclaim the prostitute any more than we can mend a broken mirror. Institutions in which they are reformed, prayed over and kept in menial positions under the condescending pity of the very good—or very lucky—are not attractive, and are, indeed, tolerable only to a few morbidly constituted women. A good share of prostitutes are such simply because, from a cold-blooded, sociologic standpoint, they are good for nothing else. That is to say, they have no domestic tendencies and are too stupid and shiftless to earn a living except at the coarsest work. Many other women, equally ill equipped, are maintained in reputable society of one grade or another by the support of their families and because chance has not directed them downward. The world has just such men, too; some anchored by family influence in respectable, even the "best," society; some who have the same bad luck as the prostitute in lacking outside support. In the latter case, the men become tramps, vagrants, beg-

gars, intermittent seekers after jobs of unskilled labor, or petty criminals. They differ from the corresponding prostitutes only because sex alone cannot afford a crude means of livelihood.

It will be seen that the problem of reclaiming a prostitute of this kind is almost insoluble. She cannot be made an independent industrial unit nor can we expect any man to marry and support her. Unless she commits some crime she cannot be legally confined. While she has too little mentality to make her of value in the world, she has enough to keep her out of an asylum for the feeble-minded and she cannot usually be restrained in an institution which has no power to restrict her liberty.

Other prostitutes have descended by a series of steps, rather than fallen, from various social and industrial positions, which they are theoretically able to resume, but which are often practically barred to them. We have known of at least three women of collegiate education thus engaged. One, indeed, was positively reported to have earned her living and tuition for the bachelor's degree by prostitution. What such a woman could have wanted of a college education is a mystery. Occasionally by their own efforts or by individual help of friends, the better educated and more capable prostitutes re-enter respectable society. How far they may have been reformed, it is difficult to say, nor is it possible to state how many leave the life of prostitution permanently, nor of what their future life consists. But it is safe to say that the great majority of prostitutes are not reclaimed and that they sink progressively lower, their lives being prematurely ended by some of the many risks to which they are subject.

From the sociologic standpoint, the reclamation of prostitutes does not commend itself. For every morally crippled, if not physically diseased, woman that is reclaimed, a place is left for some other woman to sink into.

Even disregarding the comfort of the prostitute herself, it is difficult to decide how to treat the general evil. License commits the Government to the undignified attitude of countenancing the evil. Even in connection with medical inspection it has been proved to be utterly inefficient to prevent venereal disease, and it very likely tends to increase the social evil and the prevalence of disease by affording a false sense of security to the unsophisticated.

More or less regular raiding and fining is blackmail, and is of questionable legality. The risk to the visitor is not sufficient to counterbalance the stress of sexual appetite. It imposes an undue penalty on the occasional visitor and often results in scandal that is practically worse than the evil attacked. In general, legal and social punishment cannot be visited upon every offender, and there must always be those severely punished for comparatively trivial offenses, and those who, by good luck or skilful management, escape their desserts. But when a method is notoriously subject to these drawbacks, it ought to be discontinued. Justice may not be perfect in her workings, but she should use the sword, not the thunderbolt.

It is comparatively easy to purify a district, but such a method merely drives prostitutes to other neighborhoods. It is unjust to those who have settled in respectable quarters; it imposes an enormous loss through the depreciation of real estate and produces no diminution of the ultimate evil. Indeed, it tends to remove the only possible excuse for prostitution, the lessened tendency to the ruination of respectable girls.

All things considered, we are rather inclined to the opinion that the best method, so far as wholesale reform of the social evil is concerned, is, under present conditions, a laissez faire policy. Afford every opportunity to prostitutes to prevent venereal disease and to be cured of existing disease, but make no pretense of legitimizing the trade or of guaranteeing against infection. Arrest drunken and disorderly persons in houses of prostitution as elsewhere, but abandon the theory that such persons are, ipso facto, disorderly. In other words, abandon the blackmailing method which allows the habitual visitor to such houses to avoid them on the night of a raid, and which seizes and perhaps ruins the life of the callow youth who is indiscreet, and who has done wrong in yielding to base temptations, but who is not callously and confirmedly wicked.

In our opinion, the only way to lessen the social evil, or the drink evil, or any other in which natural appetites and passions are concerned, and in which the perpetrator is his own victim—in other words, the only way to attack evils that are sins rather than crimes—is to reform the individual, or, better yet, to surround him with influences that prevent the need of reform. Legislation never made a good man or woman out of a bad one or a strong one out of a weak one. Prostitution has existed from the time when ideas of sexual purity and monogamic marriage began—in other words, from the stone age. It will continue until these ideas are generally and practically acquiesced in—in other words, until the millenium. But this admission of human weakness need not discourage the individual from doing his duty to the individual boys and girls, young men and young women and old men and old women, with whom he comes in contact. Neither does it justify us in shirking the individual duty upon a wholly inefficient expression of collective opinion that takes the form of useless legislation.

The Arzolla Plant to Fight Mosquitoes.—The department for the colonies at Berlin has been investigating this plant with a view to its introduction in the German possessions in Africa, in order for the eradication of the mosquito. After fourteen years' experimentation Mr. Bartmann, the director of fisheries at Biebrich, has found the most reliable means against mosquitoes in stagnant waters to be the growing of the various kinds of the semitropical plant Arzolla. In 1907 the colonial office ordered that the test of his method should be made by the Institute for Tropical Hygiene at Hamburg, where Director Bartmann has had the use of the State Botanical Institute for propagating the arzolla plants. As, however, Wilhelmshaven possesses a malarial station, and as especially in its vicinity hundreds of cases of malaria occurred, the experiments were made in that territory, which is full of stagnant waters and of swamps infested with mosquitoes. Whilst the proximity of the sea and the abnormally cool temperature of the summer of 1907 had an unfavorable influence upon the plant's growth, it, however, covered the experimental waters in a short time with a layer of 6. cm., which suffocated all the mosquito larvae below and prevented the living insects from depositing their eggs in the water.

THE SINUSOIDAL CURRENT IN THERAPEUTICS.*

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FOR two thousand or more years electric currents of some kind or another have been used for the purpose of combatting disease. Nor has it mattered a great deal whether the disease condition was one of functional or organic derangement.

The sparks from a static machine caused muscular contractions, it consequently seemed indicated in all conditions where muscular paralysis was the predominating element.

When Galvani brought to light the direct or continuous current it was found that this current caused flashes of light to be observed when contact was made in close proximity to the open or closed eyes of the patient. When one of the poles of this current was applied to the cheek or side of the neck a metalic taste was noticed upon the tongue; applied to other parts of the body a sensation of heat beneath the electrodes soon manifested itself. No muscular contractions took place unless the current was interrupted.

Galvani's current, therefore, possessed all the requisites for affecting the nerves of sensation, even nerves of special sense were markedly influenced. This current, therefore, became the current for affections of the nervous system; neuralgias yielded to its influence; when the distinct and different polar effects were discovered its field of usefulness broadened. In addition to all this it was found that whenever the current was interrupted, most violent muscular contractions ensued. To cause pronounced muscular contraction it was necessary to arrange in series a great many cells and so Volta for this purpose constructed the voltaic pile. Faraday discovered the system of induction, and by the use of an induction coil with only one or two cells a powerful muscular contraction would take place, but many of the properties of the galvanic current were lost, the mechanical effects became more and more pronounced while the chemical effects were entirely lost.

Since that time great strides have been made, not only by the physician in the therapeutic use of these currents, but the manufacturers assisted by the experience of the electro-therapeutic physicians have been enabled to produce instruments of almost exact precision.

The static machine of to-day and especially of American manufacture leaves little or nothing to be desired, it is not the crude instrument simply designed to bring forth sparks for muscular contraction, but by the production of the spray, the breeze, the induced, the high tension wave-current, the high frequency and the auto condensation currents, gives to it a wide field of usefulness outside of the therapeutic and diagnostic uses to be derived from the use of the X-ray.

The effects of the static current are then not merely local muscular contractions, but on the contrary, the most powerful constitutional effects predominate over the local muscular contractions. The most valuable constitutional effects are due to an influence exerted upon the sympathetic nervous system which directly controls the involuntary organs of the body.

The current for constitutional effects is a surging one, a filling and emptying or a charging and discharging current.

The galvanic current in the physician's office is either derived from cells or more commonly from the commercial street current, so arranged that almost any voltage or amperage may be selected depending upon the nature of the work to be performed. For the destruction of small growths from one to five milliamperes are required, while for the caustic effect upon large malignant growths as much as five hundred milliamperes are frequently used. For the alleviation of neuralgias the polar effect of the current is made use of, generally speaking the positive pole is placed over the painful area, for the positive pole causes a distinctly local sedative reaction at the point of application; the negative, of course, the opposite. For constitutional or internal influence it is seldom advisable to produce a local polar effect.

The Faradic or induced current is no longer the small medical coil with its powerful and painful muscular contractions. A properly constructed Faradic coil to-day must furnish a smooth pleasant feeling current capable of causing practically painless muscular contraction of the entire voluntary system. While the Faradic current does possess a more or less distinct polar action, it does not compare with that of the direct current and is therefore not used for this purpose. Its principal effect is to cause muscular contractions; when however general faradization is employed marked constitutional changes are produced, especially if the current possesses the necessary power of penetration and the electrodes are kept in constant motion, or if the current is like the static and galvanic made into surging or filling and emptying current.

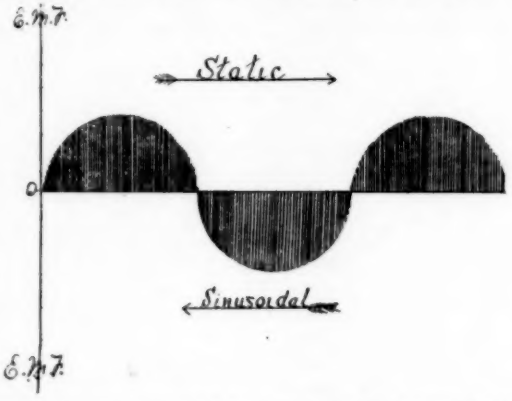
We have thus far described three principal sources of energy, viz., the static machine, the galvanic or direct current, and the induction coil. Any one of these three currents possess local as well as constitutional effects. All three produce their primary and principal effects upon the voluntary muscular system, the nerves of voluntary motion and the nerves of sensation. The effect upon the vegetative system is secondary.

Physiology teaches us that the normal voluntary nerve and muscle respond to either current in a quick lightning-like manner, while the involuntary muscles respond in a slow wormlike movement. The involuntary muscular fibres cannot respond in the same manner as do the voluntary muscles. For instance the peristaltic motion of the intestines; the slow and gradual contraction of the bladder walls, the contractions of a uterus at term, the slowly passing downwards of a bolus of food through the oesophagus, etc. It is indeed well that this is so. It will be seen at once that if we wish to cause by or through the means of an electric current, the physiological performance of function of any of the involuntary organs, we must have a current possessing certain requisites differing from the ones just enumerated.

We have seen that electric currents effected mus-

*Read before the N. Y. Physical Therapeutic Society, Dec., 1908.

cular tissue either when the strength of the current was changed, the current interrupted or when the direction of the current was changed. Any one of these three conditions will cause a muscle to contract, but the involuntary muscle cannot respond to such suddenness, it requires a gradually increasing strength or change in direction, so that the involuntary fibres can respond in a normal and physiologic manner.



For this purpose an instrument has been devised which consists essentially of a resistance coil so arranged that a sliding contact piece gradually increases the current strength by cutting out more and more resistance until the maximum current strength desired is reached, then again cutting in the wire resistance until the minimum strength or zero point is reached; through a mechanical device the current now changes its direction and again slowly increasing and decreasing in strength until another zero point has been reached and again changing direction as before.

Of course it does not matter whether the galvanic, faradic or static current is made to go through these phases. If the galvanic current is passed through such a device graphically described it would have the appearance as per diagram No. 4, whereas, if the faradic current should be used then we would have the following appearance, No. 5, while if the static were employed the picture would take on this appearance, No. 6; the static current, however, would require a very different kind of a mechanism owing to the enormous tension or stress, and the utter inability to insulate such a current properly.

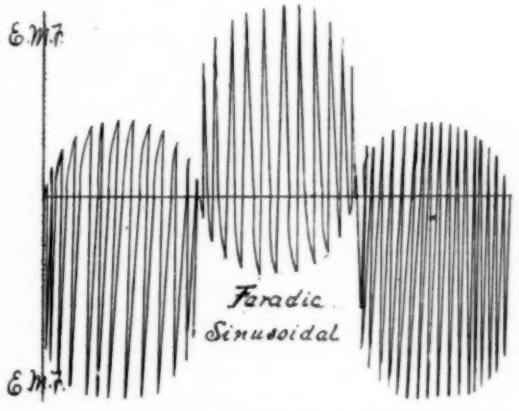
From the graphic character of the current we may infer that a muscle would gradually be thrown into a contraction which would reach a certain desired height, then gradually relax and after changing polarity again pass through a similar performance. The changing of polarity possesses the dual effect of, in the first place, preventing any possible polar effect if the galvanic current is used, this reversal of polarity causes the muscles to respond with increased vigor and seems to act as a special stimulus. Any current, whether galvanic, faradic or static, may be made to pass through suitable mechanical devices. Such machines are termed sinusoidal devices because they change the current and cause the same to assume the sine curve, hence the term sinusoidal current. It will, therefore, be seen that there really is no such a thing as a sinusoidal current per se but that any current may be made graphically to represent the sine curve.

The sinusoidal current referred to in the literature, especially the literature of a few years ago, is nothing more than an ordinary alternating current of 110 volts, 60 cycles p. s. with 7,200 alterations, p. m., in other words a rapidly alternating current with an equal rise of potential at each alternation.

Such rapidly changing alternation takes on the physiological properties of an induced current and cause, according to the potential used, a steady tetanic contraction of the muscles without relaxation taking place.

Such currents answer very well for causing contractions of the voluntary muscles, but for such we have the interrupted galvanic, the induced and the static sparks. For the involuntary muscles we require a sinusoidal current of very slow alternations, about one alternation every four seconds or fifteen alternations per minute.

In fact many pathologically changed involuntary muscle fibres require alternations as low as 10 per minute. To such slowly changing alternations the muscles can respond in a normal physiological manner. Should, however, it happen that the muscles fail to be excited by such a current a provision must be made whereby even a sinusoidal current can be interrupted the same as the direct or galvanic current; for we know that muscles may fail to respond to all currents, but the interrupted galvanic will produce a response so long as there are any fibres left capable of responding at all.

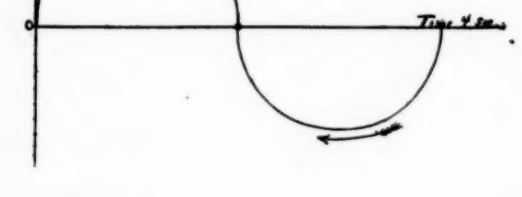


A sinusoidal current interrupted in this manner would have the following graphic appearance the number of the interruptions must of course be under the control of the operator. Even the time of make and break ought to be variable so that a long contact with a short break or a short contact with a long break may be produced.

The regular alternating current of commerce of 60 cycles per second with a consequent 7,200 alternations per minute, where the voltage and amperage can be controlled makes a most valuable current when passed through a sinusoidal machine and would have the following graphic appearance.

Still another form of sinusoidal current may be produced a sort of undulating fluctuating or surging current where the regular slow sine wave is maintained but superimposed upon this we have a current with a regular but slight increase and fall of its potential the current would have the following graphic form.

From the foregoing it will be seen that electric currents may be made to undergo many phases and changes, and as sure and varied as these changes, so



are the tissue responses. Let it be said again and again, "It is not the agent but the reaction to the agent" that must be our guide in all therapeutic practice.

We select any one particular agent by excluding for good and sufficient reasons some other agents.

There is no doubt that the underlying cause of many of our ailments is due to insufficient or faulty elimination; in other words we are suffering from retention commonly designated constipation. Conditions too numerous to mention may be the cause, the result a complication of constipation. Sooner or later intestinal atony is sure to be one of our leading features in such cases. Unless a patient can recover from intestinal atony he cannot hope to be cured of his constipation. Assuming that the patient's hygiene has been properly attended to (and when I say hygiene I mean by that one term occupation, moral, physical and psychical surroundings, habit, diet and exercise) we find that atony is present in any portion of the twenty or more feet of intestinal tract, we cast about for an agent most likely to overcome this and thus remove one of the main obstacles to permanent recovery.

The entire intestinal tract is made up of fibres belonging to the involuntary system and under the control of the sympathetic nervous system. The physiological function of these fibres is to slowly and rhythmically contract and relax. Absence or nonperformance of this function constitutes atony. Any electric current will cause a contraction of the involuntary muscles and if made strong enough a contraction of the involuntary muscles, but that sort of a contraction is not the physiological function of the intestinal fibres. We require a current that will start at zero, gradually increase its intensity then gradually become reduced again to the zero point; this sort of a current would answer the purpose as far as the stimulation of the fibres are concerned, but in addition a local polar action would manifest itself at the points of electrode contact. To overcome this local polar action it is necessary to frequently change the direction of the current. If we embody these two indications into a current we have constituted or selected a sinusoidal current simply because it was absolutely indicated and no other current seems to produce the physiological function as well as this one. Both electrodes in this instance are of the same size, one is placed over the abdomen, the other over the spine from the fourth to the twelfth dorsal, because from this region are given off the nerves and blood vessels controlling the entire splanchnic area.

The treatment should be given every other day and last from ten to fifteen minutes for each seance. The strength of current varies from forty to sixty E. M. F. and from one hundred to two hundred milliamperes. The alternations must not exceed one to every four seconds. Frequently after the first treatment, there is a desire for an immediate evacuation. From about two to four months are required to cause a regeneration of these fibres.

Frequently we meet with a condition of paralysis or atony of the lower bowel only, with or without spasm of the sphincter. The spinal electrode is placed over the sacral vertebra, while the rectal electrode, connected with a fountain syringe containing warm water, to which a small amount of ordinary table salt has been added, is placed into the rectum and the water used as an electrode. The E. M. F. should be from thirty to fifty volts, while the current may be from 25 to 75 M. A. When this condition has existed for a long time or when associated with spinal cord lesions especially locomotor ataxia, the sinusoidal current with ten to thirteen alternations p. m. should be interrupted at first about 100 times per minute, or about 15 to 25 interruptions for each cycle; this causes a most powerful muscular stimulant; it tends to throw all fibres capable of responding into a state closely bordering on tetanic contractions, and as this is not a physiological state, the interruptions must be decreased as soon as tonic contractions can be produced, and again omitted entirely as soon as the bowel responds to the simple sinusoidal current form.

Of all patients I know of, none are more grateful to the physician than the locomotor ataxia case with loss of rectal and bladder control, because of restoration of these functions. My old method based upon the good results obtained in rectal troubles, is now seldom resorted to. One pole was placed over the sacral region and with a bifurcated cord another electrode placed just above the pubes, the other electrode entered the bladder, which had previously been emptied of residual urine and filled with six oz. of normal salt solution. The current is used up to the point of tolerance for 10 to 15 min. on alternate days and according to conditions present, marked relief is obtained in about one months' treatment. Excepting in cases of grave prognosis the entire work is accomplished by the external applications of the electrodes, one over the bladder, the other over the sacrum.

Another class of cases are those of (Imight say neglected) infantile paralysis. How often does it occur that a child at three years or thereabouts suf-

fers from an anterior poliomyelitis, recovers only partially and for the rest of her life wears braces, undergoes tendon stretching or a periodical tenotomy to prevent contraction.

If in such cases I discover even a trace of a muscular contraction, I am able to give a favorable prognosis. The technic is simple; the foot of the affected limb is put into foot bath connected with one pole of the sinusoidal apparatus, the other electrode is placed over the lumbar region. Always begin with the faradic current, note all the muscles that fail to respond, then use the galvanic current, carefully noting all the muscles that fail to respond, or that contract with that well known stereotyped sluggish, wormlike contraction, a positive sign of partial reaction of degeneration. The normal muscles must be studiously avoided, while the abnormal ones receive our best attention; they must be made to perform their physiological function. There is no current better suited than the sinusoidal current either faradic or galvanic. I have seen such cases restored to almost perfect usefulness aften ten years of cripple life. While the sinusoidal current is the current for the involuntary muscles, the moment that a voluntary muscle undergoes partial reaction of degeneration, that moment it behave the same as the involuntary system and a similar agent is indicated.

Before closing this already too long paper I would call your attention to two things.

First, it is not the agent, but the reaction of the system to an agent that should guide us in our therapeutic selection.

Second, having selected an electric modality as our agent, not the wet cells in our cabinet but the gray cells of the cerebrum should be the dominating factor.

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THE TREATMENT OF TYPHOID FEVER.

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THE treatment of typhoid fever covers so wide an area that every medical means at our command must be brought to bear upon it, and it is therefore conveniently divided into (a) prophylactic, (b) dietetic, (c) hygienie, (d) medical, (e) surgical.

(a). Prophylactic Treatment.—This is by far one of the most essential parts in the treatment of this most dread disease. It not only ensures the patient against reinfection, but still more important, it limits the disease and removes the danger of infecting other people.

In hospital practice it is easily carried out, but in private practice, unless the physician lays particular stress on it, the family will have no means of knowing the danger that might arise from any negligence on their part. The physician attending the case should write down his directions specifically and not rely on mere verbal directions.

Of the various disinfectants chloride of lime is undoubtedly the best, and it is much in vogue at the present time. The usual way of ordering it is to have one pint of the solution placed in the bed pan or other receptacle before use. Two pints of the same solution are added after use, and the contents thoroughly mixed, breaking up all particles of matter, and allowing it to stand for two hours before emptying. Bichloride of mercury in the strength of 1-1000 may also be used, but it requires a much longer time, three or four hours at least, also forms an insoluble compound with the albumin of the faeces and sputa.

Disinfection in typhoid not only covers the excreta, including the stools, urine, vomitus, sputa, but also embraces the bed, with its coverings and the sick-room. The bed linen should be changed every day, and under it should be placed a rubber sheet. When changing, this, together with the linen, is received in a cloth that has already been rendered sterile by a 5 per cent. solution of carbolic acid. The linen is sterilized by boiling for a half-hour, while the rubber is placed in a solution of bichloride of mercury, 1-1000. Attention should also be paid to the sick-room, when the patient has left it. Formaldehyde gas should be generated in the room, in which the bedding is also placed, then they should be given a thorough airing for one week.

I firmly believe that if enough attention were paid to the prophylactic treatment, which forms such an integral part, that it cannot be separated from it, that there would be less cases of this disease, especially less reports of cases occurring in the same family.

(b). Dietetic.—During recent years there has been an increased tendency towards a more liberal diet than the former rigid milk diet. However, I have seen such good results to follow from a strictly liquid diet that I would be slow in adopting any other. Remembering the pathological condition present in typhoid fever, it is easy to understand why a liquid diet should be preferable. In this condition, we have disturbed digestion, lessening of the various secretions, together with an ulcerated condition of the bowels. We can easily imagine some solid food passing through the whole gastro-intestinal canal without much alteration, thus causing various digestive disturbances and thereby irritating the ulcers and predisposing to such grave complications as hemorrhage and perforation. Again, Brieger has shown that the typhoid bacilli do not reproduce very actively in peptone or pre-digested milk, whereas they do so very rapidly in meat broths and jelly, thus placing an empirical fact on a scientific basis.

As much as three or four pints of milk are usually well borne by the patient. If curds form in the stools, lessen the quantity, and if they still persist give peptonized milk. Some writers speak strongly in favor of larger quantities of water, or barley water. Professor Osler advocates the use of albumin water, made by thoroughly shaking egg albumin with ice and a small amount of water, straining and flavoring with lemon, sherry or brandy. Beef juice or its equivalents are useful adjuvants.

I am in favor of keeping patients on a strictly liquid diet for at least five days after the temperature has become normal, then gradually add such articles of diet as soups, jellies, custard, fish, minced meat and soft boiled egg. This diet is gradually increased according to the improvement and inclinations of the patient until the solid diet is resumed. However, in a good many cases, it will be found that the morning temperature is normal, while the evening temperature will rise to 100-101 degrees F. If this condition continues over five or six days, the liquid diet should be changed for a soft one consisting of soft toast, eggs, custard, and so on. It has been my experience that such changes will usually suffice to keep the temperature down to normal. Typhoid cases, considering the utter prostration and se-

verity of the disease, convalesce rapidly, and a daily improvement is generally noted when once the diet is increased and the patient is able to sit up. I remember one case occurring during the summer of last year, who was prostrated for over two months, and inside of three months after leaving bed had gained over sixty pounds.

(c). Hygienic Treatment.—The hygienic measures adopted are of the utmost importance. Such changes to be made in the sleeping apartment should be personally conducted by the physician, and other directions should be written out and given to a responsible member of the family or to the trained nurse. Skilful nursing plays so important a part in the safe recovery of the patient that if it is possible, it is best to have a trained nurse. As soon as the physician becomes suspicious of typhoid fever, without unduly alarming the family, the patient should be put to bed and kept there, until a certain diagnosis can be made. The temperature of the room should be kept between 60 and 65 degrees F., and such articles of furniture as carpets, curtains and bed hangings should be removed. The room should have a sunny exposure, and if possible it is well to have an adjoining room for the use of the patient, the windows of which should be opened, thus allowing of ventilation and avoiding drafts. Perfect cleanliness in everything used should be insisted upon. A rubber cloth may be placed beneath the sheet, so as to avoid soiling the mattress with any of the excreta. The nates and adjacent parts should be bathed daily with a mixture of alum with salt and dilute alcohol, or a solution of vinegar and water at 85 to 90 degrees F.; the position of the patient should be changed, thus avoiding tendencies to hypostatic congestions. If any signs of erythema appear, the use of air or water cushion is called for. Gentle handling of the patient is imperative, particularly the right iliac region, which is the more usual seat of the pathological lesion. The mouth should be daily cleansed with a solution of boric acid. Bearing in mind the fact that typhoid fever is an exhaustive disease, one which uses up the strength of the patient for weeks, that all muscular movements made unnecessarily is a waste of force, everything should be done for the patient so as to save some reserve force to fight against any of the graver complications that might arise during the course of this disease. The patient should be lifted on the bed pan, and should always be cleansed after with a solution of bichloride of mercury.

Medicinal Treatment.—It is well to state the fact that there is no specific remedy for typhoid fever, and although the attempts in this direction hitherto have not been successful, still some of the results obtained give promise of a future success. All of the remedies used are merely to combat symptoms; although Chantemesse has prepared a serum from the horse by injecting the toxins of the typhoid bacillus, which has previously been grown on a special medium containing spleen pulp or bone marrow. It was shown in the hospitals of Paris that those cases treated with the serum had a mortality of 4 per cent., whilst the mortality of those cases treated without it was 18 per cent. These results appear very encouraging.

The mortality has been so much reduced since the introduction of the Brand bath, that little need be said except to urge its use. There are, however, obstacles in the way of carrying out its use in private families, but I do not think that the physician should be deterred from using it simply on account of any prejudice that the family might have against it. If for other reasons, however, it is found impossible to give the Brand bath at home, the patient should get the benefit of cool spongings every three or four hours, the water at the temperature of 70 to 75 degrees F. It always ought to be given when the temperature by rectum goes above 102.5 degrees F. First one part then the other should be sponged, and gently wiped dry and covered, thus not allowing too much body surface to be unnecessarily exposed. The temperature should be taken about one-half hour after the sponge bath, when it will usually be found to be one to two degrees lower. Reise advocates a protracted warm bath when cold ones are not well borne and not productive of good results. This brings to mind a case occurring in the Backus Hospital of Norwich, Conn., whose temperature would invariably go down after a warm bath and not after a cold one, thus proving that the good effects are not entirely due to an absorption of body heat, but also to an elimination of the toxins through the skin. Prof. Osler says: "Two advantages are claimed for hydrotherapy in typhoid fever—a mitigation of the general symptoms of the disease and a reduction in the mortality. Our experience during the past five years bears out these claims."

On account of typhoid fever being of the asthenic type, the use of stimulants is more often called upon than any other class of remedies. Whiskey is the best form, but it should not be used unless it is clearly indicated. It is one of the best stimulants that we possess for a flagging heart, and a mere high temperature does not contraindicate its use as some authorities claim. When, however, we have high temperature with a full bounding pulse, its use is not necessary. In sudden circulatory depression, such stimulants as are diffusible, as champagne, are called upon. As an aid to digestion, essence of pepsin in one dram doses is useful.

Intestinal antiseptics are greatly in vogue at the present time, but their use is questionable. Salol and sulphocarbolates of zinc and soda are among those commonly used. How much good they do in the disease is uncertain, but they undoubtedly render the stools less foul and they tend to check the diarrhoea and tympanites. Turpentine is another useful remedy, not only controlling the tympanites but causing a rapid healing of the ulcers.

Such important symptoms as headache, insomnia, delirium, vomiting, diarrhoea, constipation, hemorrhage and peritonitis are met with on general principles. Hemorrhage from the bowel calls for special treatment. Complete rest is indicated; an ice bag should be placed over the right iliac region, and if possible suspended. The foot of the bed should be raised. Opium should be given hypodermically to control peristalsis; ergot every three or four hours in severe cases. Some authors speak highly of turpentine, and the following mixture will be found to be very useful: Acidi tannici gr. x., tinct. opii m. x., spts. terebinthini m. xv., mucilag dr. ii., tinct. chloroform Co m. xv., aqua menth piperitae ad. oz. i., this dose to be taken every two hours.

For severe hemorrhages, saline infusion is to be strongly advised. It not only raises blood pressure, but

has an hæmostatic action.

Surgical Treatment.—This only has reference to certain complications, as hemorrhage and perforation. In severe cases, when the hemorrhage is profuse and the patient is showing the signs of marked anemia from the loss of blood, and after a fair trial of medicinal means without result, the aid of the surgeon becomes necessary. The bleeding vessel should be tied off, and if there is much ulceration of the bowel, a resection may be thought advisable.

In perforation the only hope of a recovery lies in opening the abdomen and suturing it, and that as soon as the diagnosis is made.

603 West 184th street.

THE PROPHYLAXIS AND TREATMENT OF PULMONARY TUBERCULOSIS.

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THE development of tuberculosis depends upon two main considerations: the presence and activity of the essential germ and its allied bacteria; and the condition of the body by which it becomes predisposed to infection. Logically, then, to prevent the disease we must destroy the bacteria; and must fortify the body and make it resistant to bacterial invasion.

The spittle of the consumptive contains the bacilli; the liquid particles ejected by the consumptive in coughing, sneezing or even in speaking may also (and generally do) contain the Koch bacillus. Thus may this infectious material, if not disposed of properly, be deposited at home upon floors, carpets, walls, napkins and dishes; or abroad in public buildings and vehicles. Thus is this germ-laden material carried about by the wind; or it dries and becomes incorporated with the dust which other people inhale. Sunshine, fresh air and pure water destroy the bacillus; but not invariably, because the broken-down tissue contained in the sputum, or the sputum itself, or the dust with which it becomes incorporated, makes a caché or envelope for the bacillus, which gives it some protection. There should therefore be no spitting in the thoroughfares (except in gutters or in the spittoons provided in public places). The consumptive should invariably, while indoors, hold some cloth or tissue paper before his face during coughing or sneezing; many bacilli are revealed in such cloths by the microscope. There are various receptacles (spit cups either of glass, metal, porcelain or card-board) contrived for the use of the consumptive. These vessels should either be burned or thoroughly disinfected several times a day (at least daily) by cleansing and scalding. Consumptives who are too weak to use a cup should use moist cloths; the advanced consumptives are the most dangerous disseminators of the disease, by reason of their inability to be careful regarding their spittle. All sufferers must be taught not to let their sputum soil their hands, face and clothing. Frequent ablutions are necessary for the consumptive; frequent brushing of teeth, of rinsing and cleaning out the mouth, especially after meals. Male patients should, if possible, be clean shaven.

"No spit, no consumption." This legend does not connote the whole of the prophylaxis; nevertheless, if it were lived up to absolutely, there would be little for the healthy to fear from this disease, and very little infection by the consumptive of his fellows. Besides, the bacteria, not only of tuberculosis, but also of pneumonia, diphtheria, influenza and the like, are contained in sputum. The prohibition of spitting or the requirement to spit in appropriate receptacles, is very essential in the workshop, for the consumptive workman has been found to infect his fellow workmen more than the members of his own family.

The consumptive should kiss as little as possible, and should not, in any event, kiss others, especially children, on the mouth.

When the consumptive is bedridden, a pail, containing a disinfectant, should be constantly at hand into wihch clothing, blankets, sheets, towels, etc., used about the patient should be dropped immediately after use and before being removed from the room. Every room, especially every bedroom, should be thoroughly ventilated, and at a temperature between 60 and 70 degrees F. Air that is constantly rebreathed soon becomes toxic. Nor is cold air necessarily pure simply because it is cold: it must be changed equally as well as warm air. There should be no stoves in sleeping rooms; the fires in them are ravenous of oxygen, and they emit carbon monoxide, which is very poisonous. All consumptives should be registered with the Health Departments; and the apartments which they have vacated, or in which they have died, should forthwith be disinfected.

It is in the house where tubercular infection is most developed, and by a house is here meant any enclosure whatever which may, by reason of negligence, uncleanliness or poverty, become dirty, dark, damp and ill-ventilated. It is in the home, the factory and the workshop that the greatest danger of infection lies. Low grog-shops probably come next in point of infectivity.

To prevent infection, tuberculosis meats should be thoroughly cooked; where there is the slightest question of an animal being tuberculous, the viscera (the liver, kidneys and the like) should not be eaten; for it is the organs which in general first become tuberculous, the musculative last of the tissues. Fish, fruits and other eatables exposed for sale on stalls and push-carts are oftentimes the means of conveying tubercle bacillus, which have been deposited upon them in street dust; all such merchandise should be covered.

If the purity of milk is not assured it should be Pasteurized. (A double boiler is used, the inner vessel containing the milk, the outer water. A bath thermometer is put into the milk, which is maintained for twenty minutes at a temperature of 165° F. After this the milk is put, properly covered or in stoppered bottles, in the refrigerator or in a cool place until it is needed.)

Children should be instructed not to swallow the sputum; the excreta from unhealthy upper air passages may also be swallowed, giving rise to ingestion tuberculosis. Adenoids and hypertrophied tonsils should be removed. Flies, and no doubt other insects also, are certainly very prolific disseminators of tubercle bacilli. Houses should be screened against them. Infants may contract the disease by putting to their mouths infected objects, while playing on the floor. Human feces and urine contain the bacilli; they are in general, however, effectively disposed of, and are rarely responsible for infection.

Infection by inoculation is comparatively rare. Nevertheless, it is incurred through open wounds, especially of the thorax. Surgeons, students in the dissecting room and butchers are especially liable. If infection is to be feared, cleansing and surgical antiseptics should be regularly employed.

When we consider prophylaxis with regard to predispositions to tuberculosis, we think first of marriage. We counsel against marriage where tuberculosis is active in either the man or the woman. Flick has well declared: "Many a young man has sacrificed his chances of recovery on the altar of Hymen"; and it is equally true that: "When consumption is hanging about a girl the distance between the marriage bed and the grave is usually short with her; the husband, if he does not become a widower soon after the birth of the first child, may count upon a perpetually ailing wife."

We do not fear direct infection in the offspring of such a union; nevertheless, we may have here to deal with the scrofulous temperament—the pallid skin and flabby flesh, tedious and subacute inflammations of the mucous membranes, enlarged lymph nodes, an unhealthy throat, bronchitis, gastro-intestinal disorders, sluggish metabolism. There may be strumous thoracic malformations, deficient ossification, stunted and weazened growth, diminished respiratory capacity, impoverished blood, defective circulatory development. Everything should be done toward rectification of these abnormal conditions—at least for their mitigation as much as possible, not only for the sake of the child itself, but also for the avoidance of harmful effects upon future generations. Functional modifications are more important than anatomical ones; they are more likely to be transmitted, and are obviously more amenable to treatment. Although there may be no definite anatomical stigmata a pernicious nutritive habit is often transmitted, with which the physician must deal. These little patients must, of course, be kept under observation not only for weeks or months, but for years.

A weak or a consumptive mother should not nurse her infant. There is little likelihood of her milk being infected, but the infant may contract inhalation tuberculosis while taking the breast.

The school years—those tender years between early childhood and adolescence, must be carefully safeguarded against both tubercular infection and predisposition to it. The adolescent period is a constant source of predisposition, not only to tuberculosis, but to disease in general. It is emphatically to be recalled that consumption begins to manifest itself with dreadful frequency about the fifteenth year. With puberty comes on oftentimes radical mental and physical transformation; so that the boy or girl if not carefully piloted, may deviate from even the most perfect health to a well-nigh permanent tendency to disease.

Alcohol and tobacco should be used in great moderation by adults with a tendency to tuberculosis; all excesses, especially of a sexual kind, should be avoided. Adults should be especially careful after having experienced a serious disease, such as pneumonia or pleurisy; finally, no individual can ever afford to "neglect a cold."

THE TREATMENT OF TURERCULOSIS.

In phthisiotherapy we determine first upon rest. This is a factor exceedingly difficult of management, especially among the poor, who feel that they must work in order to maintain themselves. We are very inexorable about rest when there is fever. The rest must be absolute if the fever reaches 100 degrees F., and bed is ordered if it reaches 101 degrees F. The consumptive must not endure the slightest fatigue or overexertion; the rest should, if possible, be outdoors. When the air is cold, warm headgear is to be worn; or the woolen "helmet" which comes down over his clavicles. He is wrapped comfortably in abundant clothing or "sleeping bags"; the feet must be very warm. Porches, verandas, fire-escapes, yards, the roofs of houses may all be utilized in this way.

The next principle of treatment is that the patient shall every possible moment in the twenty-four hours breathe fresh air and be in the sunshine. Hence we speak of the "twenty-four hour cure." At night, no matter how cold, the windows are opened. Of course, draughts are to be kept from the patient; this is done by means of a screen, or a clothes-horse covered with a blanket, placed appropriately. Only twice from day to day should the patient's windows be closed. (A member of the family or an attendant comes in half an hour before dressing time and closes the windows; and again at bedtime opening the windows after the patient is snugly in bed for the night.

Next after oxygen comes the necessity of plenty of nutritious food stuffs, and of good digestion, so that *all* the fuel that is taken in may be assimilated and converted into healthy, germ-resisting tissues. We decide upon details in individual cases. In general terms we try to get the largest amount of nourishment with the least amount of labor for the alimentary tract — roasted or broiled beef, mutton and lamb, fresh vegetables and fruits, cereals mixed liberally with cream, kumyss, plenty of sugar, good butter, a generous admixture of table salt, and at or between meals (if possible) from six to eight eggs and from one to three quarts of milk from day to day. We avoid such indigestible things as sweets, pastries and dainties; these interfere with normal metabolism—the perfect conversion of oxygen, fluid and food into healthy tissue. Between meals, at any rate, plenty of water will be drunk. Alcohol should be used only in cases when the physician is assured of his patient's ability to restrain himself in its use; in appropriate cases small amounts of whiskey (half-ounce doses), wines, egg-nogg or sherry and egg will be found beneficial. To give free rein in the use of alcohol would be disastrous.

As to medicinal treatment. No patient should use medicines without the direction of his physician; patent medicines must be avoided, as also nauseating syrups. We now give no medicine by way of routine, and we hold medicines subsidiary to hygienic, dietetic, hydropathic and "physiologic" measures generally. We individualize in prescribing for our consumptives, as in all other diseases. The various organic functions have to be regulated according to the individual condition and necessity and the complex relations of the tissues and organs. In one case the kidneys especially need therapeusis, in another the circulation, or the nervous system or the alimentary tract. In tuberculosis at least it is absolutely essential that we do not use drugs in a haphazard way; here we must know what we are giving and the reasons for our prescribing.

In afebrile incipient and early cases of tuberculosis hypodermatic injections of Koch's old tuberculin (O.T.) are valuable. The Committee on Medication of the National Association for the Study and Preven-

tion of Tuberculosis here advises as follows: We begin with very small doses—1-20 mgm. All febrile reactions are to be avoided. Injections are made every third or fourth day, and preferably in the evening. We increase, at first by 1-20 mgm. at each successive injection; then by 1-10 mgm. until 1 mgm. is reached; then by 1-4 or 1-2 mgm., then by entire milligrammes. When larger amounts are reached—50 or 75 mgms.—intervals between injections are gradually lengthened until there may be from one to two weeks interval when the amounts have reached several hundred milligrammes. Any slight febrile reaction is an indication for a reduction of the amount at the time of the next injection; and no injections are given until several days of normal temperature after even a slight rise. A course of injections may be completed in about four to six months, and resumed after a period of several months' rest. Several such series of injections and rests should be employed.

The cough can in tuberculosis oftentimes be suppressed by exercise of the will and by training of the patient. If necessary, however, we give codein (1-8 gr. to 1 grain) two or three times at night, when the cough is most distressing.

We strive to induce sleep without medication if possible; however, it may be necessary to give from time to time five grains of trional combined with ten grains of sulfonal. Insomnia has been chiefly responsible for many a consumptive's death.

For the reduction of the fever we rely mainly upon rest and fresh air; still, an alcohol and water rub (aapa) will occasionally be appropriate. For the night sweats we give atropine (1-200 to 1-100 grain), agarisine (1-10 of a grain), zinc oxide (3 grains), camphoric acid (10 to 30 minims). For the pleuritic pains we strap the chest, paint with tincture of iodine, apply iodine-petrogen, and give internally aspirin or phenacetin (of either 5 grains t. i. d.)

In coping with hemoptysis we must bear in mind the double circulation—the systemic and the pulmonary. It is essentially the latter, the pulmonary, with which we have to deal, rather than the systemic. The blood pressure may differ entirely in the two; and the condition of the latter may not at all guide us correctly concerning that in the lungs. The pulmonary pressure must be guarded by the right heart and by the amount of blood supplied to the right ventricle; this is difficult and perhaps impossible to determine. When we are called suddenly to a case we cannot and should not attempt extensive physical examination. The lungs and the heart must be given rest and the mind must be soothed. Morphine by hypodermic lowers the pulse rate, quiets the cough and relieves apprehension. The posture should obviate the effect of gravity and prevent passive congestion. The patient must not lie flat; he must be well propped up with pillows; he must be made to lie on the side from which the bleeding comes if we know which it is (as we will if the patient has before been under our observation), so that the blood flow will not choke the unaffected lung. The diet should be restricted—cool and partly dry, as in aneurism. Ice may be given to suck. Ergot, ipecac, adrenalin and digitalis must be avoided, certainly in profuse hemorrhages. They cannot possibly obliterate vessels and they are likely to be very harmful, in that they raise blood pressure, which it is our aim to lower. Here morphine and the nitrites are essential. Aconite lowers blood pressure; but it is very depressing. Amyl nitrite pearls should be broken and inhaled; the effect here will last but a few minutes when this procedure must be repeated. Nitroglycerin acts less promptly than amyl nitrite; but its effect is more lasting; to be efficacious it must be given in large doses up to 1/20 or even 1/10 of a grain. Sodium nitrite acts least quickly of these three remedies, but its action is much the more prolonged. Most enduring of all is erethrol tetranitrate, which may be given after the others (one or two half-grain tablets every 4 hours), when the hemorrhage is prolonged, or when we fear a repetition of it. Ice bags may be placed over the region of the cavity from which we assume the hemorrhage to come; placed over the precardium the ice bags may calm the nervous and perhaps tumultuous heart. Turpentine inhalations are recommended for this lowering effect upon the blood tension. In desperate cases we elevate the limbs; and we ligate them in the hope that the systemic nervous congestion thus induced may relieve the pulmonary congestion.

I have found preparations of the lactic acid bacillus most effective in the indigestion to which tuberculosis is prone. For diarrhoea we give calomel, iodoform, tannalbin and bismuth subnitrate; for constipation cathartics and oil enemata at bedtime. For tuberculous laryngitis we insufflate orthoform, apply lactic acid (30 to 80 per cent.) to ulcers, and give frequent inhalations of two per cent. formalin solutions, apply ice bags to the throat; prohibit speaking and (late in the disease) cocainize before meals.

Guiaicol carbonate is an excellent medicament in tuberculosis. It has not the dreadful taste and all-pervading odor of creosote, which it has supplanted. A good capsule (to be taken four times a day) is: Guiaicol carbonate, gr. v.; quinine sulphate, gr. i.; pulv. nucis vom., gr. 1/4. Arsenic and iron simply or in combination are excellent when anemia is marked. Fowler's solution is especially appropriate before meals for anorexia. Cod-liver oil is excellent if it well borne; the food fats, cream and butter are efficient substitutes, however. The hypophosphites are oftentimes most helpful.

The Nurse and the Rest Cure.—J. M. Taylor (Month. Encyclop., June, 1908), finds the most important factor, next to the wisdom and tact of the physician, to be a suitable nurse, who must qualify not only technically, but intellectually as well, and in that far higher sphere which is inexactly described as the realm of common sense, since it is one of the rarest of gifts. The nurse's business in the conduct of the rest cure is to maintain a symmetrical, consistent daily routine; to keep the patient all the time "guessing;" to supply just enough conversation but not too much information or explanation. Patients often remark that the rest treatment was among the busiest periods in their lives. All this keeping busy is essential. The patient is and should be passive (in extreme cases absolutely so, all "doings" being done by others. At first the nurse actually places food in her mouth. Conversation had best be of the simplest. Not the least part of the cure is the selection of topics; the character of their pursuit is the duty of the nurse under hints supplied by the physician.

DIAGNOSIS OF UTERINE CANCER.*

BY JOHN OSBORN POLAK, M.D., BROOKLYN, N. Y.

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THE price of every failure of diagnosis in uterine cancer, or a diagnosis made so late that the cancer has already become unsuited for operation, is a human life. With this fact constantly before us, it behooves us to avail ourselves of every means at hand to make an early diagnosis in uterine cancer. In this paper, I will take up the diagnosis of chorio-epithelioma, epithelioma, and adeno-carcinoma of the cervix and adeno-carcinoma of the body.

Chorio-epithelioma may occur in any child-bearing woman. The youngest reported case being a girl of seventeen, the oldest a woman of fifty-two. The earliest symptom of malignant chorio-epithelioma is hemorrhage. It almost invariably follows closely upon an abortion or the discharge of a hydatid mole. The blood loss is copious and frequent, manifested by excessive menstrual flow or metrorrhagia, or hemorrhage of spontaneous origin following closely upon an abortion, or the expulsion of a hydatid. Such a history should always excite suspicion. Fifty per cent. of the cases of chorio-epithelioma have occurred after the discharge of a mole. The usual means employed to check hemorrhage fail utterly. Curettage often increases the hemorrhage; a dirty watery discharge often foul-smelling occurs between the bleedings. With such a history in a child-bearing woman, the pelvis should be explored.

The uterus will be found to be large, the cervix open, and the interior filled with more or less abundant material, soft, brain-like, friable masses which bleed profusely when handled. As this degeneration follows abortion, intra-uterine exploration with the finger will usually show the growth to be at or near the placental site. Careful digital curettage with microscopic examination of the scrapings will usually show an invasion of the blood vessels with malignant cells. The cachexia is early, anaemia is marked, the haemo-globin is low, the specific gravity of the blood is low, and the red cells diminished and changed in shape. A low grade of fever is comonly present. The pulse is rapid and feeble and loss of weight and strength are extreme.

Metastasis occurs so early as to be characteristic of the disease. In no other form of cancer is metastasis found so early. The vagina appears to be the earliest point for metastatic foci, though remote organs as the lungs, liver and brain may be the site of these malignan rests which are carried through the blood channels. The growth perforates the uterine wall by extension into its musculature.

Cancer of the Cervix.—The point of origin is of extreme importance, in that it influences the operative prognosis. The disease is usually insidious in its onset; if its incipiency passes unnoticed, it reaches the stage of the classical symptoms, hemorrhage, leucorrhoea and pain, when it is too late to make a radical cure. It must be remembered that these symptome are the results of ulceration, necrosis and tumor formation which mark the later stages of the cancer.

It has been because the physician has been taught to diagnose cancer by these symptoms that women who are beyond the help of the knife present themselves for treatment. We have earlier evidences of cancer if we will but look for them. The menstrual history of each patient should be carefully elicited during menstrual life. The menses may be more profuse or prolonged. The woman should be interrogated as to menorrhagia, metrorrhagia, spotting, etc. Spoting after coitus, after defecation, or on exertion is significant. Compare every bleeding with what it has been in the same patient. Repeated blood examination may be of some diagnostic aid in the early stage of cancer. The relative percentage of haemo-globin is always diminished though the patient presents no apparent anaemia. The specific gravity of the blood is also reduced and in most cases there is some leucocytosis. Later when the cachevia and emaciation occur, the blood count is confirmatory. The leucorrhoea at first is a muco-purulent discharge, later serous, the sero-sanguineous, finally sero-purulent, acrid and fetid.

The discharge in cancer *always loses its mucous consistency.* Patients over thirty-five having irregular bleeding or staining without gross lesion, or having persistent leucorrhoea, should be curetted and the scrapings eaxmined by the microscope. Investigations along this line have been positive.

Diagnosis of Flat Cell Sarcoma of the Cervix.—The symptoms and physical signs depend upon the stage of the pathological processes, and for clearness, the development of flat celled cancer may be divided into three stages.

It begins as a nodule or ulcer of the cervix, indurated, but without loss of tissue; the cervical lips are thickened, hard and nodular with or without ulcer. The cervical tissue bleeds on manipulation. The mucous membrane covering the cervix may show large and small nodules, having a glazed bluish white appearance, as though just ready to burst, or an ulcer with a glazed surface presenting delicate finger-like projections, which bleed easily. The examining finger is always soiled with blood.

The second stage is that of moderate disintegration of the cervix. Here the cervical landmarks are obscured or obliterated by cauliflower excrescences. The base is hard and nodular. The surrounding tissue is infiltrated and more or less lymphatic extension into the paramentrium may be appreciated.

The third stage is that of extensive and complete involvement of the cervix with tissue necrosis, vaginal and parametrial extension.

During the first stage irregular spotting on exertion, defecation or coitus is suggestive, the menses may be profuse or prolonged, a serous discharge may occur in the intervals between the bleedings; it may have a more or less penetrating offensive odor, irritating, causing itching, or in rare instances it is non-irritating, but the mucous characteristic is always lost. Some patients in this stage look the picture of health though the blood examination will reveal the changes referred to above. There is usually no pain, while others complain of a dull gnawing pain in the lower abdomen and back. This I be-

*Read before the Brooklyn Gynecological Society, Jan. 1909.

lieve to have no significance as an early diagnostic sign in this stage. The disease must be diagnosticated from the eversion of the cervical mucous membrane, or from extension downward of the cervical mucosa, a condition occurring in the nullipara at the external os, or an erosion or ulceration of the cervix. In none of these is there induration as in cancer. Again if a ten per cent. solution of the sulphate of copper be applied to the eroded surface it covers the ulcer with a bluish white coating if the ulcer is benign, while it starts up bleeding in cancer.

Adeno-Carcinoma of the Cervix.—When the disease has its origin from the cylindrical epithelium of the cervical canal, or the cervical glands, hard protuberant nodules may be felt in the cervix, but there may be enlargement of the lower cervical segment. Infiltration may also be appreciated before the nodule breaks down, or if the nodules are near the external os the portio is enlarged, firm, bluish and glazed looking. The examining finger is soiled with blood.

The above mentioned findings in a patient over thirty-five are more than suggestive. When the disease begins near the external os, the cervical tips are apt to become involved. Digital and ocular examination may show one or all of the following lesions:

The lips thickened, infiltrated and glazed. The os very small and indented, or may not be made out at all. On passing the finger or sound into the ostium the cervical canal is found to be a dilated disintegrated cavity; and the surface tears when seized by a tenaculum. Examination of the scrapings from the canal or of a section from the indurated nodule will make the diagnosis positive.

The earliest subjective symptom is sanguineous discharge, the so-called spotting after exertion, defecation, or coitus. This is due to the endo-cervicitis not to any changes in the growth, as tissue necrosis is late in cancer from this origin. Or there may be a yellow, offensive discharge which may or may not be tinged with blood; or a serous discharge without mucous. These symptoms are inter-menstrual; occasionally a constant hemorrhagic discharge is the only evidence of the uterine disease.

Hemorrhages from cancer of this origin are more likely to occur after exertion. Pain is a variable symptom. A sensation of weight and fulness in the region of the uterus was noted in many of Kelly's and Cullen's cases. However, any unexplained loss of strength and weight is always significant. The prominent point in distinction between the flat-celled cancer and adeno-carcinoma of the cervix is as follows:

In the quamous cell form the growth is very friable and bleeds easily, while in adeno-carcinoma the tissues are firmer, structural necrosis being a late process.

Adeno-Carcinoma of the Body.—Occurs primarily in about two per cent. of the cases of malignant disease of the uterus. It begins in the cylindrical epithelium and utricular glands of the corpus as a papular growth of slow development, which after filling the corpus tends to invade the adjacent muscular tissue. It may have infection as a late complication. The disease usually begins after the menopause between the ages of fifty and sixtv. The former belief that this form of cancer was confined to this period and limited to nulliparous women has been disproved, as many cases of adeno-carcinoma have been seen in young parous women; though it is most frequent in the nulliparous.

Any sanguineous discharge after the menopause is suspicious. Usually the earliest symptom attracting the patient's attention is a profuse watery discharge from the genitalia. This may be blood tinged or sanguino-purulent and cause irritation, itching and burning of the genitals. The discharge may be present many months before hemorrhage occurs. The mucous characteristic is also absent. The patient may complain of a sensation of weight in the region of the uterus, or refer her discomfort to the lower part of the abdomen and back, with more or less pain running down the thighs. The development is slow and the neoplasm filling the cavity and enlarging the uterus to a considerable size without invasion of the underlying muscle, as the growth is primarily superficial. When the disease occurs during menstrual life of the patient the menses may be profuse and irregular. After the menopause the bleeding is intermittent or continuous depending on the size and disintegration of the neoplasm. The insidious, persistent and continuous loss of weight and strength unexplained by any gross lesion should always suggest malignancy.

Physical Signs.—The uterus is usually symmetrically enlarged about to the size of a six weeks' pregnancy. A sense of dulness may be elicited by vaginal, abdominal, or recto-abdominal examination. Bimanual manipulation usually expels detritus and soils the finger with blood. The cervix frequently patulous. Bleeding may be very profuse on passing the sound into the uterus. Curettage is indicated and a diagnosis from the scrapings is positive.

In closing let me impress upon you the necessity of eaxmining every woman during her menopause and warning her as to the significance of the suspicious symptoms of incipient malignant disease.

287 Clinton Avenue.

THE RELIEF OF POST-OPERATIVE DISTRESS.

BY JOHN EDWARD JENNINGS, M.D., BROOKLYN, N. Y.
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THE introduction of anaesthetics has so greatly extended the opportunities of surgery to save life and check suffering, that we are disposed to pass lightly over the sickness that almost inevitably follows their use. But the patient remembers it. To his mind it is often the most dreaded feature of the operation. Sickness following anaesthesia is undoubtedly a very real thing, and the more it can be diminished, the better.

It will be convenient to group the forms of post-operative distress under two heads:

First, those cases due directly to the anaesthesia. And,

Second, those due to other causes.

In the first class are nausea and vomiting, thirst, headache, mental depression.

In the second group, backache, local wound pain, retention of urine, abdominal distension, shock and

many accidental and special varieties of misery such as ether conjunctivitis, etc., that do not deserve discussion here.

Vomiting and nausea after anaesthesia is the most troublesome single symptom that we have to deal with, but it varies greatly in individual cases. Sometimes it will cease before consciousness returns, so that the fortunate patient has no recollection of nausea or vomiting. But this is rare. In most cases where anaesthesia lasts an hour or less the vomiting lasts a few hours only, and the nausea is usually gone by the morning of the following day. Generally speaking, the sickness increases:

1. If the amount of ether given is unusually large.
2. If it is given carelessly and unevenly, so that the dilution of the ether vapor with air varies, and if the patient is allowed to swallow large quantities of saliva and ether.
3. If the anaesthesia is unduly prolonged.
4. If the patient's stomach and bowels have not been suitably prepared.
5. It is regularly worse in abdominal operations, especially operations on the stomach and its vicinity, and when old adhesions are broken up.
6. And in interference in conditions that have already set up severe reflex symptoms, or a secondary neurasthenia.

In a suspension of a previously retroverted and adherent uterus, more nausea, vomiting, headache and depression will follow than either the duration of the anaesthetic or the severity of the operation would lead one to expect. And it is a persistent symptom of peritonitis and intestinal obstruction.

As has been said, it usually subsides within twenty-four hours, but in exceptional cases it lasts for days.

Considering the anaesthetic as a variety of poisoning, it is clear that the vomiting which follows it is due in the first place to ether swallowed with saliva at the time of the operation, or excreted into the stomach, or excreted into the lungs and coughed up and swallowed; and in the second place to the effect of the drug upon the central nervous system.

These two factors seem to be present in differing degree in different cases. Sometimes there is an acute gastritis set up by the swallowed ether, with violent and prolonged retching and vomiting. Epigastric pain and tenderness, extreme thirst, and even small streaks of blood in the vomited mucus.

In other cases there is little vomiting, but the nausea persists for days, with the headache and depression that belongs with it.

The cases in which the vomiting and nausea continue after the great thirst has disappeared are those in which the nervous side predominates.

TREATMENT.

With regard to treatment of ether sickness the indications would seem to be clear.

First: In the way of prophylaxis to limit, so far as possible, the amount of ether used and to have it given evenly and with a throat as dry as possible.

Second: When the patient is in condition to swallow and vomit intelligently it has seemed rational and useful to give him a large drink of water with sufficient alkali to cut the stomach mucus. This is promptly returned, brings with it a collection of mucus and ether—from which it frees the stomach, and often ends the vomiting.

Third: The use of ammonia by inhalation, in the form of aromatic spirits or some variety of smelling salts sometimes act in ether intoxication in a way not unlike its action in similar alcoholic conditions. Instead of ammonia in chloroform cases, Hare recommends acetic acid; and a preparation known as aromatic acetic acid, which is dilute acetic acid with a small amount of acetic ether added has a more pleasant odor and is efficient.

Fourth: At this time, when consciousness is just returning, morphine is best given if it is to be given at all, although large or repeated doses are contra-indicated always, I think, and in some abdominal operations one would use it with caution in any dose. I believe in small quantities; it will greatly relieve most patients as they come out of ether. From one-tenth to one-sixth of a grain hypodermically is enough.

We have found an ice bag under the head and back of the neck in the patients in whom the stage of exhilaration is prolonged, and hot water bottles in those in whom depression comes on soon, are useful, and diminish both the headache and the later nervous nausea that has not been mentioned.

After the first large drink has been vomited, the amount of fluid given is kept down for a few hours, but I think it is not necessary to keep it very low if it is given hot. If the thirst is so great that it is not relieved by the hot water that is given an ounce at a time, or if the stomach repeatedly rejects this, it will be somewhat helped by allowing the patient to flush his mouth with water or soda water. Ice water and ice to suck are decidedly bad at this early stage. The water should be as hot as the patient can take it.

Just as soon as the vomiting is well over the amount of fluid should be increased in generous amount in almost every case. Nothing at all is to be gained by keeping the patient thirsty, and in the weak and the aged much may be lost.

Post operative thirst may be greatly diminished by the use of a few saline enemata during the first twenty-four to forty-eight hours in cases where the vomiting and nausea is prolonged.

I am inclined to think that we are too rigid in keeping patients flat upon their backs, and that they will be much more comfortable, often the first hour or two, if pillows are gradually given until they are well propped up. This position will do a good deal to prevent the appearance of the backache of which many patients make bitter complaint, and will, I think, help some of the women to urinate more easily.

Both retention of urine and backache belong to the troubles of the second day, and are both very clearly allied to the nervous depression that follows recovery from ether. In alcoholic poisoning this regularly appears as remorse. In ether it often causes an exaggeration of real enough distress, and makes complaint more frequent, more bitter and more personal than the occasion demands. I have found champagne in small quantities cold, very comforting in these cases. Whiskey will not take its place; good brandy or sherry may be used as a substitute, but champagne seems to make the patients feel better.

The cause of the backache is not definitely known. It has been attributed to a sprain of the spinal ligaments from the sagging of the lumbo-dorsal curve of the spine when its muscular supports are paralyzed under ether. But if that were the case it ought to occur oftener and to be more severe in heavy men, which is not true. Certainly it may and does very well follow the use of the Esmarch crutch to support the patient in a partial opisthotonos position, as is sometimes done when a spica bandage is to be applied. But the sprain theory seems insufficient. Some cases are much relieved by vigorous back rubbing.

Certainly pelvic work in women who have suffered from backache from the need of it, will make a very lame back for a while.

And I have seen cases, especially in young men in whom the ache seemed to have the situation and character of an ache from prostatic congestion. I don't think its cause is definitely known.

With regard to local wound pains: Whether they be abdominal or not, I think morphine is best withheld. If enough is given to relieve the pain, the nausea and general depression are apt to be increased when the first effect of the drug passes off, and in abdominal conditions is apt to be increased. So that, while I think one small dose of morphine is a good thing for ether vomiting, I would not use it at all if it could be avoided for wound pain.

I will not take up the subject of shock and its relation to the sensations of the patient. It has been the object of this paper to call attention to the fact that it is our duty to make our patients as comfortable as we can, even in the cases where life is not endangered at all.

164 Halsey street, Brooklyn, N. Y.

THE FORENSIC IMPORT OF PSYCHIC EPILEPSY.*

BY S. P. GOODHART, PH.B., M.D.

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THE protean manifestations of the various degrees of psychic variation, with or without concomitant motor seizures in epileptics are recognized as playing an important role in criminology. The genuineness of the psychic equivalent is now conceded both scientifically and legally in questions of forensic import. With true paranoia it is the one undisputed form of psychic aberration which is conceded as an honest defense in criminal cases where its presence can be demonstrated. There are innumerable cases on record where impulsive acts, atrocious in character, and of impulsive violence, in which to the unskilled eye the element of reason and even premeditation appears.

It must not be forgotten that the psychic manifestations may appear quite independently of any antecedent motor symptoms; indeed, they stand in absolutely no relationship, the one is quite as much an entity, epileptic in character, as the other. I have seen many cases purely psychic in character, some of which have led to criminal acts, and others again, I am quite sure, remain a source of constant menace to society, one not knowing when one of these psychic outbreaks may show an aberration due probably to hallucinatory impressions leading to an act of violence.

The care of these unfortunates is really a problem, scientifically, socially and economically most perplexing. The psychic outbreak acute in character may be the one element in the individual's life making him unfit for his environment. He may be otherwise a perfectly normal being.

These cases, of course, are usually of neurotic disposition, excitable, lacking in some degree the average self control. There are exceptional instances where, on the other hand, these unfortunates are entirely en rapport with their surroundings.

In some of these cases of psychic epilepsy warning is given in the form of a distinct aura. The following case is, in several respects, most interesting, particularly in that the aura is a most unusual one. The patient is thirty-six years of age. His mother died of diabetes, an uncle on the maternal side died insine. There is nothing in the patient's former life of importance. He has been moderate in alcoholic indulgence, and also with tobacco. He has not had syphilis. He is physically strong; mentally and intellectually of average endowment. He has had four what might be termed epileptic seizures. The first occurred in June, 1905. Suddenly while quietly conversing, he was seized with a sensation as though the calf of the left leg were suddenly swelling to enormous proportions. The foot then became involved and he made a violent effort to remove his shoe, loudly shouting to those about him to aid him that his leg was bursting. At this point he lost consciousness. Those about him described a slight convulsive movement of both arms and then violent resistance, shouts, and an effort to break away from those who attempted to restrain him. He was overpowered and removed to the hospital in a straight jacket. He recovered consciousness in about six hours. After remaining in the hospital a few days during which time the only symptoms present were exhaustion, he went home and resumed his work. During the seizure his tongue was violently bitten.

The next attack occurred 17 days later, on the 5th day of July. He ascribes this attack to the excitement of the day previous, the 4th of July, when, he says, he was very nervous owing to the fireworks. Normally he is not disturbed by excitement of that kind. At about seven in the evening an exactly similar sensation in the leg developed. He had been admonished that should an attack again occur, to remove his artificial teeth. He did this, and again attempted to remove his shoe, although, of course, there was no actual swelling of the limb, the swelling being entirely subjective. He describes a sensation, after having thrown himself on the bed, of being revolved about an immense iron bar, while the bed on which he lay was turning upside down. At the same time he recalls hearing his own voice shouting, and remembers that it seemed to him as though the voice came from another person. It is known that part of this sensation was experienced while efforts were being made to hold him in bed in the early part of the attack. He was again restrained after great effort and remained in a straight jacket for

*Report of a case presented before the N. Y. Neurological Society, Feb. 2nd, 1909.

about six hours. He recovered in a few days and was apparently well, having bitten his tongue, however.

After this attack he described a feeling of numbness in the area of the left calf and outer side of the lower leg, where the subjective sensation of swelling had ushered in the attack.

My eaxmination made soon afterward revealed in this area a marked hypaesthesia. About one year later, June 30th, a similar attack occurred, and another on the day following. Since that time the patient has remained under treatment—dietary, bromides, etc., and has been free from the paroxysms. The area of hypaesthesia persists.

I believe that we can have a case in which an act of violence would not unlikely occur during a psychic outbreak. There is nothing in the previous history of the patient indicating epilepsy.

267 Central Park W., New York City.

A STUDY OF THE CLINICAL DATA IN EIGHTY CASES SUBMITTED TO X-RAY EXAMINATION FOR URINARY CALCULI.

BY CHARLES EASTMOND, M.D., BROOKLYN, N. Y.
Radiographer to the Long Island College Hospital.

DOUBTLESS every worker in Roentgen diagnosis has been impressed with the disparity of clinical and Roentgen diagnoses of calculi in the urinary tract. All have seen patients presenting the classical text-book symptoms of renal calculus but have failed to discover any shadow on the X-ray plate that would be in the slightest degree indicative of that condition.

The term "calculus" from a radiographic standpoint is taken to mean a stone of sufficient size as not to pass naturally, but to demand surgical interference.

Early in my work this disparity struck me most forcibly and when in patients presenting such symptoms that, from a clinical and surgical point of view, operation would have been undertaken without hesitation no calculi could be demonstrated, I began to doubt the value of Roentgen diagnosis in this condition or to doubt my own ability to discover such shadows even though they were present.

We have all failed to discover lesions or shadows on the plate in our earlier days that later, with more experience and keener observation, have been perfectly apparent, but, in spite of the most carefully taken plates with all the necessary detail, and with painstaking interpretation, it was still found that calculi were often not present when most expected, and also that they were frequently present when clinical symptoms would lead one to suspect them least.

These facts impressed me so strongly that some time ago I decided to keep a brief history of each patient referred for examination of the urinary tract, recording the following points:

1. Seat of the pain.
2. Points to which the pain is referred.
3. Frequency of urination.
4. Urine: acid or alkaline.

Presence of pus, blood and crystals, or history of having passed calculi.

From such data, compared with the Roentgen findings, I have prepared the following summary from eighty consecutive cases, and while not conclusive from so small a series, may at the same time be of some value:

TOTAL CASES 80.

Calculus present, 23. Negative, 57.

23 cases of calculus—
- With typical renal symptoms 8
  (Two of these had additional calculi on other side.)
- With indefinite symptoms 9
- With symptoms on opposite side to calculus... 3
- With symptoms referred to remote points..... 3
  (Of these, two had renal symptoms with calculus in the bladder; one with vesical symptoms, calculus in the kidney.)

57 cases negative—
- With typical symptoms without sand or calculus history 26
- With typical symptoms with sand or calculus history 18
- With vague symptoms without sand or calculus history 4
- Without vague symptoms with sand or calculus history 9

80 — 80

58 with clinical symptoms—
- Calculi in 14 or 24 per cent.
- Calculi in suspected region in 8 or 14 per cent.

22 with vague symptoms—
- Calculi in 9 or 41 per cent.

URINE.

	Pus.	Blood.	Both.	None.	Total.
Twenty-three cases of calculus—					
Typical symptoms with calculi—					
With sand	1	1	1	1	4
Without sand	1	2	0	1	4
					8
Vague symptoms or symptoms referred to other points than site of calculus—					
With sand	2	1	2	0	5
Without sand	5	1	0	4	10
					15
Fifty-seven cases, negative—					
Typical symptoms o calculus—					
With sand	3	6	4	5	18
Without sand	5	4	8	9	26
					44
Vague symptoms o calculus—					
With sand	0	3	0	6	9
Without sand	1	1	2	0	4
					13
	18	19	17	26	80

From such a summary, showing that in this series urinary calculi were present in only 24 per cent. of the patients presenting classical symptoms of that condition, and in only 14 per cent. were they in the suspected region, while in 41 per cent. of those with very vague and uncharacteristic symptoms calculi were demonstrated, I believe that it is our duty to call the attention of the medical profession to the fact that the presence or absence of urinary calculi cannot be determined from the history of the patient and the urinary findings. And that the Roentgen method in the hands of competent operators is the only sure way of making the diagnosis positive and absolute.

382 Adelphi street.

[1] Read before the American Roentgen Ray Society, December 30, 1908.

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WHAT SHALL THE PROSPECTIVE MEDICAL STUDENT STUDY AT COLLEGE?

AS has been shown by statistics, nearly 20 per cent. of the men now being graduated at medical schools have been through college and, by the time the medical classes of 1914 have received their medical diplomas, probably nearly, possibly over, 50 per cent. will have had at least one year's work in college.

For the most part, this increase in requirement has been brought about by the desire to afford the best method of instruction in the most economic way, resulting in turning over to the college the special branches of chemistry, physics, certain biologic branches, etc., which would require a duplication of equipment if taught in the medical buildings of universities, and which would strain the financial resources of the independent colleges.

But, while recognizing the practical advance accomplished, it is a somewhat narrow view to restrict the training of the medical student in the college to those subjects which can be taught a little more thoroughly and a little more economically in the latter. For the medical student required merely to take one year's work in college, not much more than this narrow purpose can be fulfilled, although he may add one or two rather easy, broadening studies, at his choice.

For the student spending six years on a combined college and medical course, the view can be very materially broadened and largely by looking at matters from both directions. Instead of considering solely what work, didactic and laboratory, can best be given on the literary side of the campus and what extras may be attached to the medical course, why not first let the college faculty plan a course, from the standpoint of the college student, but inserting all the scientific branches of the medical work, such as physiology, physics, chemistry, microscopy, biology, etc., that may be considered as educative in the broad, non-technical sense? Then if any compromise is necessary, let the course be adjusted to practical requirements.

As a general principle, we believe that two extremes should be avoided in selecting college courses. At one of these extremes we have the boy who wants a college education and who has not the slightest idea of what line of life work he will subsequently follow. Such a boy either takes his course haphazard for the sake of the prestige of a college diploma, or he selects snaps and idles away his time, or, at least, he chooses his course so as to develop his intellectual tastes in the easiest way by taking subjects that he likes and discarding those in which he needs training. At the other extreme, we have the boy who knows exactly what he is going to do, who doesn't care a water-barrier for mental training, and who weighs every particle of study against requirements for graduation and ultimately in terms of earning power.

Stanley Coulter, Ph.D., a college professor, has well emphasized that the high esteem in which the classics were held by educators for centuries deserves some consideration, and, in addition, he points out the value of an enlarged vocabulary, of an acquaintance with what medical men might call the complicated morphology of the dead languages and of the literary, mythic and historic lore with which such study acquaints us. In addition, it may be stated that the medical man has to acquire a technical vocabulary of probably not less than 40,000 words, mainly Latin and Greek derivatives. Most of the newer technical words added to the medical vocabulary are Greek, or at least are imagined to be so by the men who propose them. While the use of language is not in one sense a practical matter, a fairly correct understanding of technical words is at least as practical for a physician as a knowledge of the construction of his tools is for a carpenter or plumber. Moreover, if one is to take a first hand interest in medical history, a knowledge of the dead languages is essential.

Some acquaintance with French and German, especially medical German, which is practically a separate language, is also highly desirable, and while at present German medicine receives much more attention by Americans than does French, the latter is even more important from the standpoint of the practical physician. There is even a pretty direct commercial advantage in knowing German, and of later years Spanish and Italian.

Mathematics ought to be studied by every man and woman who expects to have any influence in the world, as a matter of mental discipline. Algebra can be used to a considerable degree in medical quantitations, and

also in business. There is, however, one value of mathematics for the man who is destined to be of some prominence, which is usually overlooked. When such a man is liable to get opinionated and arbitrary and to be spoiled by success, it is a good thing for him to look back and remember that there were men who originated complicated lines of abstruse thought which he himself not only could not originate but which he could not comprehend after repeatedly following in their trail.

Stenography is a study not only of considerable educative value but capable of saving much time in the future and particularly desirable for the note-taking of the medical student and practitioner. It also throws much light on the subject of phonetics and hence on the management of defects of speech.

Botany and, to a less degree, zoology are the foundations of the older materia medica, and in the literal sense they embrace bacteriology and parasitology. When a physician uses rhus toxicodendron as a substitute for toilet paper, or fails to recognize deadly night-shade berries that children have eaten, it casts discredit on the profession. Moreover, it seems that a practical familiarity with plants might be of economic importance in enabling the physician to gather certain drugs at the optimum time, and that if the profession knew plants thoroughly, there might be discoveries of valuable new drugs.

LECTURES TO WORKING GIRLS ON "SOCIAL HYGIENE."

THE *Chicago Evening Post* commends, in an editorial, a series of lectures on this subject, to be given by a number of the women physicians of the city. We gather that the lectures are to be mainly on the various phases of the sexual problem.

It has often occurred to us that instruction on social life would be invaluable, not only for girls and boys, but for adults, if it was practicable on the one hand, to cut loose from snobbishness and trivialities and, on the other, to avoid issues, one phase of which is distinctly immoral. Unfortunately, from the standpoint of wholesale instruction, different grades and local circles of society, have very different customs and standards, so that social instruction in a broad sense almost necessarily becomes an individual matter. Hence, it follows that some have good preceptors, others bad ones, while still others have to blunder along without much help.

In the limited sense of the lecture course under discussion, we question whether wholesale instruction is ever advisable. In any considerable audience, there will be those whose sensibilities will be shocked and whose modesty will be blunted by hearing plain truths; there will be others who will attend with salacious motives, or even for the sake of picking up useful bits of information to enable them to avoid the consequences of sin rather than sin itself. We believe that, at the right time and in the right way, every young person should receive some degree of instruction along the lines of sexual and moral hygiene. Generally speaking, parents, physicians, clergymen and teachers are the ones from whom such instruction should come. We do not believe that every individual of these groups is adapted to the delicate task nor do we believe that the individual boy or girl can be best reached in all cases by any one of these instructors. Similarly, we question whether any individual combines the necessary knowledge, tact and personal influence which would enable him—or her—to present the subject in the best manner to any considerable group of young persons.

Setting these questions aside, in this particular instance, it may again be questioned whether, even in a large city, several women physicians can be found who will have had the same kind of social experience as the girls whom they are to address, whether, that is to say, they can all be in touch with their audience; whether instead of being able to discuss social hygiene in its proper broad sense, the lecturers will not descend to trite moralities or to the inspiration of fear by semi-technical descriptions of certain phases of pathology and that phase of sexual physiology which ranks with disease.

Sexual morality is too well understood to require special lectures, indeed, the less we dwell on truisms of ethics, the more likely their observation. Long discussion of principles of right and wrong suggests to many that, after all, there is some doubt as to the distinction between right and wrong.

We would also point out that, whatever may be thought as to the propriety of imparting information on sexual matters by lectures, the alarmist has no place on the platform. Things are no worse than they really are. A magnified microbe may cause fright, but, afterward, there is leisure to reflect that the law of chance, if nothing else, prevents any disease from being ubiquitous in its incidence. Afterward, too, there is opportunity to learn of methods of prophylaxis aside from the general one which the alarmist emphasizes. However terribly the pathology of a disease may be depicted in a lecture, this is but the thrill of an hour. Daily, in every newspaper, there is the comforting promise of cure. Of course, such promises are mainly by quacks and are usually misleading, yet the line of inquiry started by the alarmist soon elicits the information that, in every item of incidence, result and negation of prophylactic and curative measures, the lecturer has exaggerated the real facts. And then the pendulum swings back. Will it simply drop down to the point

at which alarm has disappeared or will it swing over to the other side where danger is courted?

Two points we wish to emphasize: It is worse than useless to attempt to prove or elucidate a moral axiom; real morality cannot be based on fear of consequences or expediency.

THE FLY THAT DOES NOT WIPE ITS FEET.

THIS is the terse observation recently made by Dr. Woods Hutchinson with regard to that very dirty creature, the house fly; and it is very pertinent now that the warm weather is drawing near. Another investigator, Daniel D. Jackson, S. B., of Brooklyn, in his work incorporated with the report to Governor Hughes, of the Merchants' Association of New York, on "The Pollution of New York Harbor as a Menace to Health by the Dissemination of Intestinal Diseases Through the Agency of the Common House Fly," states how he found one hundred thousand fecal bacteria upon the legs of one fly, who "was making straight for the nearest milk pitcher."

The tubercle bacillus is unquestionably distributed by flies. No one will doubt this who has seen the Petrie plate containing a nutrient medium upon which was deposited a fly that had previously been walking in the spittle of a consumptive. A glass jar confined the fly. The plate, at first perfectly clear, soon presented colonies invisible to the naked eye and made up of uncountable bacilli, developed along this insect's tracks.

One cannot doubt that flies help greatly to swell the infant death rate which is highest in fly time. Of course this mortality is due not alone to the depredations of flies; the intense and enervating heat and other seasonal factors are to be considered. But a predominant factor is certainly the fly, which breeds and thrives indiscriminately and with equal zest in both filth and food. The fly will breed in an open closet, in putrefaction, in a dung heap, and then will come in through the open and inviting window and deposit its filth and its bacteria upon milk, butter and meats. A more disgusting subject it were difficult indeed to consider. We are now agreed that most diarrhoeas and dysenteries are due to specific germs. And it is a very pertinent observation that breast fed infants almost never suffer from these diseases.

Besides tuberculosis and the dysenteries, it is very likely indeed that flies disseminate cholera, trachoma, tetanus and markedly typhoid. The latter disease is disseminated whenever the typhoid bacilli in the excreta of typhoid patients are not properly destroyed by disinfection or burning; they may be carried from open or box privies by means of underground drainage into wells, streams, small lakes and reservoirs; the flies carry the germs from such excreta to food and drink, by which means the disease is propagated. Typhoid carriers may for months or years harbor the germs, for the most part in the gall bladder, and may by means of their evacuations spread the disease.

Howard describes the following method of destroying the larvae and the eggs of the house fly: Residuum oil is used in privies and cess pools; two litres per superficial meter of the pit is mixed with water, stirred with a wooden stick and then thrown into the receptacle. This covering of oil should kill all the larvae, prevent the entrance of flies into the pit and at the same time the hatching of eggs. A protective covering is thus made for the excrement, and this is said to hasten the development of anaerobic bacteria as in a true septic pit, leading in this way to the rapid liquefaction of solid matters and rendering them much more unfit for the development of other bacteria. For manure it is recommended to mix this residuum oil with earth, lime and with phosphates and spread it at different times, in the spring by preference, upon the manure of farms and stables. Delamarre, of Paris, destroys flies in houses by means of a 1 in 9 solution of formal, put upon plates; twenty-four hours after not only the plates, but a little space around them will be covered with flies and mosquitoes which have been attracted by the mixture and its emanations. The solution should be changed every day.

It has been well pointed out that better than destroying the insects themselves is to prevent their breeding. The summer descendents of a single fly may exceed a million individuals; so that the prevention of breeding is a far more effective method of extermination than by attempting to destroy a few hundred among those myriads. To prevent breeding we must first have an understanding of the fly's breeding habits. Ninety-eight per cent. of the eggs are laid in stable manure; and two per cent. in garbage and other filth. Ten days is the incubative period when the fly emerges full grown. If the manure is placed in a pit which is rendered inaccessible to flies by means of solid doors or traps the eggs will be deposited in some less suitable place, where only a small proportion can develop. Moreover, if the manure is removed every ten days and spaded into the ground, eggs that have been deposited will be destroyed before maturity.

Of course the best prophylaxis against flies is adequate cleanliness in and about houses; then there will be nothing to invite these scavengers.

Filipino Medical Graduates.—The recent graduation of a class of Filipino physicians from the Philippine Medical School marks an epoch in the higher educational work of the American Government in the Philippines. Filipino women are also in hospital training as nurses.

A MOST POTENT AID TO LONGEVITY.

ENLIGHTENED self interest is a most legitimate factor in the improvement of human conditions, and a factor much more normal than many others (such as unwisely directed charitable activities). Professor Irving Fisher, now president of the Committee of One Hundred on National Health, recently succeeded in stimulating judicious self-interest when he addressed the Association of Life Insurance Presidents on the feasibility of postponing deaths in the cases of their clients by some eight years above the expectations based on present survivorship tables. It is stated that the concurrent estimates of some eighteen specialists indicate, for diseases of middle and later life, such as tuberculosis, pneumonia, typhoid, Bright's disease, heart disease and apoplexy, that from one-fourth to one-third of deaths are preventable, and that half the deaths of early life might be postponed. Upon such basis has Prof. Fisher argued that while the insurance companies might by intelligent effort gain 15 per cent. on the premiums of the insured, their families would gain uncomputed and uncalculable millions in the earnings of those whose lives had thus been prolonged; whilst the added years would have their own inestimable value. A single insurance company, for example, pays out yearly four-fifths of a million dollars in death claims because of tuberculosis, a preventable disease. This suggests a practical step, such as any business like insurance company should, in its own interest, take toward the lengthening of the lives of its policy holders; nor has the suggestion been long in bearing fruit. For example, the Chief Examiner of a great company has evolved a plan to reexamine policy holders at five year intervals, thus detecting unsuspected diseases in time to check them or to effect a cure; here is brought into play the most powerful of all forces for health—the interest of the individual whose life is at stake. It is estimated that by this plan alone five years might easily be added to the lives of the policy holders examined. Among other methods we note that in Prussia, the home of prophylaxis, the average individual life now lengthens at the rate of twenty-seven years a century. In nineteenth century Prussia the average life lengthened at the rate of seven years; and in the seventeenth and eighteenth century at the rate of but four. In India the rate of increase in twenty years has been nil; here there is vast room for improvement. The difference between periods and countries is purely that of education and of reformed habits, customs and laws. It is indeed becoming a brilliant characteristic of our young century—the popular education in the postponement of death. By this means we bid fair to preserve for our great blessing and satisfaction many valuable lives; prominent among which is that of Professor Fisher, who but for the methods he is now so powerfully recommending, would himself have died years ago of tuberculosis. Thus also were the lives of Brehmer and Dettweiler preserved many years; by this means also does humanity to-day (as, we hope, for many years to come) benefit by the labors of Trudeau, Flick, Carrington and many another who in his younger years suffered from this disease.

TEARS OF BLOOD.

THE British Medical Journal sets forth the popular belief that certain individuals are able to weep tears of blood—a belief of such antiquity that the German equivalent for "bitter tears" is "blutige Thränen—"bloody tears." There seems, however, no authentic instance of blood having actually been secreted by the lachrymal gland. Micas, states our esteemed contemporary, was some years ago consulted about a boy aged twelve, who, from the slightest cause, such as laughing, or sometimes apparently for no cause whatever, wept tears of blood—an occurrence often repeated several times a day, in fact. The lad was pale and enervated from constant hemorrhage. The source of the bleeding in this case was the tarsal conjunctiva, which was covered with fine papillae; and light application of the galvano-cautery produced a cure. This case led Micas to study the literature, with the result that he has provided us a very interesting article on real and false tears of blood. In none of the cases he was able to discover did the blood certainly come from the conjunctiva or from the lachrymal passages. He considers it unwise to deny the possibility of sanguineous secretion from the gland, but that examples in which other sources cannot be shown to be present must be exceedingly rare.

The appearance of blood in secretions need not be surprising; we need not to-day, as was formerly the belief, look upon such a phenomenon as miraculous. There have been examples of bloody sweat; there are patients who can suck blood from their unabraided skin. These dermal hemorrhages result from the rupture of microscopic vessels. They may come about even through attention concentrated upon given parts of the bodily surface, in essentially the same way as when John Hunter was able, by concentrating his attention upon his big toe and wiggling that member vigorously, to get up an attack of gout in it. In such diseases as purpura these dermal hemorrhages are conspicuous. Stigmata have often been exhibited by hysterical people; the history of religious exaltés is replete with statements of such phenomena. Nor do we see any occasion to doubt these statements. The explanation here lies in the excellent definition of hysteria given by Moebius—that it is a disease in which morbid ideas control the body. The

thought of a hemorrhagic manifestation in any tissue, if sufficiently concentrated in an overwrought and highly emotional psychism, may conceivably result in the appearance of "bloody spots."

THE CHILDREN'S CHARTER.

THUS has the English children's act now in force been termed. It is an act so wide in its provisions that twenty-one others dealing with children are entirely repealed by it, while seventeen others are more or less overridden. In its consideration are to be connoted a number of conditions quite startling to us on this side of the Pond.

Among the classes of people who will at once be affected are parents, foster parents, tobacconists, publicans, policemen, automatic machine makers, park keepers, magistrates, dealers in old metal, pawnbrokers, entertainment managers, barge owners, chemists, farmers and bakers. It is expected that many dreadful abuses of child life will come to an end. For example there is the situation afforded by the publicans, or in our own term, the saloon-keepers. A clause in the act forbids the presence of any child, boy or girl, under fourteen, at any time in the drinking bar of any licensed premises; the mere idea of any such custom comes as a shock to our American sensibilities. There is a great increase in drinking and drunkenness among women, and a great and increased number of women are brought before the London magistrates charged with being drunk and disorderly. "Go where you will in Great Britain and you will find the drinking bars of the ordinary public houses frequented by women. They stand at the bar drinking beer or spirits just as the men do. In many cases they bring their children, boys or girls, with them. The baby in arms is taken, perhaps, more frequently than any other child, for it cannot be left alone in the house or at play in the street. The custom of giving the child, not excepting the baby in arms, occasional sips of whatever liquor the parent is drinking is almost universal." It is the hope (to which we thoroughly subscribe) that the Children's Act will banish such scenes as this from civilization.

There is also an important provision dealing with the sale of tobacco to children. To most adults tobacco is not detrimental; to the organisms of children and the adolescent its use is, we believe, fraught with great danger. And it is a righteous proceeding to punish severely tobacconists and others who provide the weed to the young. An examination of many other clauses makes it obvious that many evils have existed in England, which are nonexistent or at least rare among us. It is indeed vital that these evils should be obviated; since the very existence of our civilization depends upon the mental, moral and physical health of our children.

LA GRIPPE.

INFLUENZA has not now the virulent characteristics of a quarter of a century ago, when the first epidemics of the present type afflicted our people. The natural history of infections has here obtained; with time the essential bacterium has had its evil properties attenuated. Nevertheless, influenza is at best a most uncomfortable disease; and, if it be not in itself fatal, may be the forerunner of such fatal diseases as pneumonia and tuberculosis. Indeed, Dr. Walter Bensel, the Sanitary Superintendent of the Metropolitan Health Department, recently announced that the fatalities from the influenza have resulted in "an alarmingly high death rate."

With reasonable care one need not fear La Grippe. The germ finds lodgment in the throat; whence it and its toxins filter through the mucous membrane into the lymphatics and the blood. It has been found in practically all the organs and tissues—the digestive tract, the lungs, the kidneys, the meninges. Hence the pains so greatly distributed, the acute oedemas in the head and face, the temperature and the marked prostration. The dust and the high winds of the spring months increase the facility by which the symptoms may be contracted. The prophylaxis is to keep clean by means of the tooth brush, the nasal cup and the gargle, the mouth, teeth, tonsils and nose; to avoid excesses in eating and drinking; not to discard too early warm raiment.

Women doctors are more numerous now than a decade or so ago, but on a numerical basis medicine has not attracted the ladies in the same manner as has a number of other fields. It would seem that women possess the inherent qualifications to make good physicians. There are many reasons for such belief. It is a common lay opinion that women, who are the main material in the practice of medicine, would prefer to "tell their troubles to a lady." Quacks and charlatans have made much of this idea. It looks as if it ought to be correct. However, it is only in a measure true. Women have always depended upon man when in trouble or sickness. It is a part of her nature, and the psychological searchlight with all of its subtleties and niceties does not make it clear just why this should be. She needs the broad and wholesome influence which man brings into her life with a certain evasion of the little details which are a part and parcel of her complex nature. Women need men to help them to forget some of the miserable little things that torment their lives and to lead them out into a wider, broader existence. This is one side of the matter. On the other hand the mere fact that a woman has greater sympathy and more method in her work ought to qualify her to be a good physician. She has a good memory, and does not forget what she told the patient yesterday. Her tact and intuition are qualities that commend her.

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The book has been of the greatest use to those who desire to study and teach ophthalmology.

The plates are exquisite works of art, most realistic, being similar to those in the companion book by the same author, on External Diseases of the Eye.

Any one who uses the ophthalmoscope should have a copy of this book.

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It will prove of use to the general practitioner as well as to the teachers and students of ophthalmology.

Conservative Gynecology and Electro Therapeutics: A Practical Treatise on the Diseases of Women and Their Treatment by Electricity. By G. Betton Massey, M.D., Attending Surgeon to the American Oncologic Hospital, Philadelphia; Fellow and Ex-President of the American Electro-Therapeutic Association; Member of the American Medical Association, etc. Sixth Edition, thoroughly revised. Royal octavo. 462 pages. Illustrated with twelve original, full-page, chromo-lithographic plates and fifteen full-page half-tone plates of photographs taken from nature, and numerous engravings in the text. Bound in extra cloth. Price, $4.00 net. F. A. Davis Company, Philadelphia, Pa.

The author of this excellent work, now in its sixth edition, has done much in the past to lessen the number of unnecessary operations and sacrifices of organs in non-malignant affections of women, and with further experience, he is inclined to emphasize rather than modify his words upon this subject.

The purpose of his work is the positive elucidation of the technic and value of the several modalities of electricty in the diseases of which he treats.

In the present edition an entirely new chaper is added devoted to the principles of electro-chemical surgery in the removal of new growths, the treatment of tubercular adenites by zinc-mercury ions, and the use of high-frequency, high potential currents in gynecology.

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Practical suggestions are added at the end of each chapter which will be found of great service to the student.

The subjects are treated in a manner to be easily mastered, the germ layers being studied from a comparative standpoint.

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Over one hundred pages are devoted to the progress of medicine during 1908, forming a splendid year book.

This is one of the up-to-date publications which every practitioner requires.

Prognosis and Treatment of Laryngeal and Pulmonary Tuberculosis. — Dr. Beverly Robinson (American Medicine) thinks there are practical errors in the management of tuberculosis, and that hygiene and environment, however important, are not sufficient to cure, but local and general creosote medication must be practiced. Dr. Robinson's wide experience in these cases, makes him one of our greatest authorities on the subject, and what he says should be given due weight.

CORRESPONDENCE

DRUM-BEATS IN THE WHITE PLAGUE COMBAT.

To the Editor of the MEDICAL TIMES:

We are working by advanced methods to save human lives. It is evident that study and space in medical print, devoted to the present rally against our national pervasion of consumption awakens patriotic consideration. A masterly march is now on. When aggressions of a tenacious foe are to be determinedly resisted, if not totally arrested, there is nothing so manly as a square and persistent fight. Shirking to the rear in the crisis of valiant combat is the unpardonable sin of non-resistance to the pillage of human life about us, while nothing but ghostly shadows and skeleton's graves are won for booty. Not many of us can feel gratified with ourselves if we merely wait to take chances for doctoring at consumption, when it happens to stalk across its stage of struggle, to drop unhelped into tombs of oblivion at the end. We may all at least strive to seek to rout the infesting mildews that spot and rot the fibres of vital energies, step by step, where little or no rescuing interference is being courageously made. Even a calamity delayed, a year of time graciously added to life, before fatal collapse, is a forecast of possible victory.

It tends to elevate the working sphere of physicians, young and old—and I have been fifty-one years on the field—if we occasionally review our commissions—renew our grasp on the mission to which we were specially appointed by virtue of our diplomas. We are here to cultivate all available means in human reach to benefit the health and happiness of mankind. In this service we don't need to wait and see what somebody else first says or does. The privilege is ours to get right down to the study and understanding of causes that effect human health about us. Clever gentlemen in other parts of the world have but their local spheres, climates, social conditions in which to construct their individual conclusions according to the bent of their leanings of work. But we have our local spheres also, if we will actively investigate all subjects for ourselves and make ourselves masters of the opportunities about us. When it comes to the study of consumption, each may become his own preceptor, his own monitor, his own judge. What will he do? Dig out solutions for himself in all the ordinary surroundings of individuals who need his medical care and direction.

There is very little disease except that developed from personal habits and environment. What else is there to abnormally impress and disarrange the natural functions of the human body? Nobody in Germany or France is squarely qualified to pronounce judgment on forms of illness developed in the location of Philadelphia or Chicago. Each individual, everywhere, lives according to the local qualities of the air he inhales where he lives. I found that the treatments successful for sick among rural folks in Montour County, Pa., was not successful among miners, in Schuylkill County, and my successful treatment there had to be entirely revised for success in Philadelphia. In each location the atmospheric conditions and homes and habits of population were different. Individuals who lose the priceless gem of normal health in the form of tuberculosis, do so in line with defects developed in the blood: and the nutritive status of the blood depends on the local conditions in which the individual breathes, moves, works, sleeps, seeks recreation or discharges religious duties. He or she thus metes out, hour by hour, the individual grade of daily and nightly existence.

Nearly every variety of diseased condition is naturally followed or attended by variations of bacilli expression in the process of organic degeneration. Nature follows in the way of nature's make-up. Even in the combustion of anthracite, the ash is not of same quality or color. We have gray ash, white ash, red ash. The varied types of coal determine the types of ash resulting from the process of the coal's degeneration when burning. The ash, (bacillus) never produces the coal as mined; the combustion of the coal is accompanied by differences in the types of waste. By illustration, the bacillus developed by degeneration of different physical elements or organs is naturally a product corresponding with differences of preceding physical conditions, the accompaniment of change wrought by the degeneration of disease. When we find boils and carbuncles involving skin and muscle structure, we also find a certain type of bacillus. Let us think of closed sack pleurisies, where the products of acute inflammations are taken up by resolution, the pleuritic bacilli absorbed, devoured by the restored blood, and the case convalesces on time instead of meeting fatal end. If bacilli developed the shut sack pleurisy, instead of the pleurisy developing the accompanying bacilli, how could the pleurisy get well? In pulmonary consumption we meet a different structure and condition. The spongy lungs have open gates through which to discharge or expectorate the bacilli with the loosening waste. On reaching sunlighted air, those bacilli speedily become nil. As sputum is usually disposed of, when collected, very few bacilli ever reach the medium of flying dust; and by that time are impotent as compared with other riotous elements of house dust, street dust, shop and factory dust, gassy locomotive dust.

The "germ," the bacillus, formerly vaunted as the virile agency that wormed itself into the human system as prolific cause of general and special diseases, is losing its vaunted prestige in the awakening of more consistent reasoning. Koch's doctrines were always working like a cart before the horse and the horse hoofing backwards. Old "Rough and Ready" in the war with Mexico, declared that the trouble with Santa Anna was that Santa Anna didn't know when he was licked in battle—though he had to run away at every engagement to save himself! We will see presently what has licked the bacillus theory. The fact that sunlighted air disarms bacilli of all varieties, sprung to the foreground the rational assurance that Fresh Air Treatment was the natural preventive, and hence the natural remedy for tuberculosed conditions. Why? Because the vitalizing oxygenation of clean, fresh breathing-air means revived

life to the blood—while dirty or vitiated breathing-air means natural degeneration and resulting death. On no other rationale or logical basis, will tuberculosis ever be suppressed.

But says one: "How about bacilli in tuberculosis of other parts than the lungs?" Just there strike the spike with an iron beetle and clinch it. Timely and certainly furnish continuous flow of fully aerated blood current —blood of healing quality—for the nutritive work and restoration of every other part of the body, and the bacilli resulting from the degenerative process of disease are annihilated, "eaten up," with the precision that obliterates disease naturally and restores life's best chances. As for bacilli, we should know that the human system readily rids itself from its local ferments (germs), even the morbid proceeds of local inflammations in many instances, by the process of "resolution," through the restorative agency of improved blood. Instance, cases of pneumonia. Nay, worse, cases of shut sack inflammation of pleuro-pneumonia, peritonitis, inflamed joints. Even our dead catgut material, surgically used, is absorbed and removed from deeper locations where employed, and rendered harmless by virtue of healthy circulating blood.

The best lessons of the International Tuberculosis Exhibition and lecture teachings in this city spelled but one substantial conclusion, namely, the great awakening of nearly half a million of public visitors to the incontestable fact that the only reliable human defense against tuberculosis must begin and abide in sanitary breathing-air wherever people are, stop, stay, or go to for any purpose in life. The presumption that consumption may be controlled and prevented by serum injections into the body, is but an idle theoretical myth painted from colors of inferential deduction, as compared with the one and only natural and effective remedy, namely, complete and continuous aeration and purification of the blood current by inhaling clean air for everybody alike. Under the systematic regime of such personal sanitation the hapless invasion of incidental bacilli would prove as infertile for breeding consumption as would atoms of bran for the reproduction of a hill of growing wheat or cockle—the tare—the tare of the Bible. The general introduction of such health measures among population would put a short-stop on all close, stuffy, badly ventilated habitations, places of employment for males and females, schools, churches, places of amusement, cars, modes of travel. It would revolutionize and re-model the existing plans of stinted ventilation of apartment stores, sweat shops, and all other prevalent congestions of crowd air.

This revolution is feasible. It can be achieved by agitation, by education, by earnest application of the more sanitary way. When ministers, teachers, railroad men, craftsmen, landlords, municipal officials, the newspaper press, magazine literature mutually rouse to the practical importance and possibility of preventing consumption by simple means of promoting common betterment of health of population, the dismal records of deaths by consumption must certainly dwindle in numbers. The decrease is not yet here in marked degree, but must reasonably follow as substantial result in course of time's development. There is already gratifying hope in the inspiration of action. But the victory will not mature by steeple-chasing after fluctuating bacilli, as certain expectant "scientists" yet feign to believe. All substantial progress, by natural laws, must materialize through the media of sanitary environment, rational precaution, fresh air ventilation, elevation of vital stamina. This simple but grand truth may need to be repeated a million times, therefore it is repeated again here.

In the wavering salient of vigorous contest, reinforced at present by the International Exhibition, brief rally-words by eminent champions and recruits deserve a niche in the medical record of the day to mark the pace of sensible advance. The lectures in the Exhibition auditorium were numerous and spoken by many educators from different localities, but apply to all parts of the civilized world.

The eloquent William Jennings Bryan, not yet President of the United States: "Deeply impressed with the array of facts vividly shown in the International Exhibition in Philadelphia, I want the people out West to see these things. I shall become one of the crusaders against tuberculosis, and will devote much time, as editor and public speaker, to aid the good fight."

Dr. Dixon, Commissioner of Health, Pa.: "By act of 1905, Pennsylvania has spent $1,000,000 for the repression of tuberculosis. We believe we have saved 20,000 lives. Have put 500 indigent patients into comfortable sanitary quarters at Mount Alto. Have established 107 dispensaries in as many different parts of the Commonwealth to disseminate knowledge and treatment for incipient cases. Have proved that tuberculosis is both preventable and curable. That the right use of God's sun and air will overcome tuberculosis if taken in time. That sanitation is of greater benefit than medicine, it cures by preventing the obstacles of worse conditions. That ignorance is death to many unless the average person be taught by physicians that such simple things as the purifying of sewage with chloride of lime and the prevention of disease by considerate ventilation may be enjoyed by everybody."

Mayor Reyburn, in advocating free city open air camps on unoccupied ground in various parts of the city for consumptives: "It is my intention to call the matter up before Councils and to insist that something be done by the city in establishing health camps, where persons suffering from tuberculosis can spend the whole day in the open air, and also be furnished with good nourishment free. The plan contemplated is to have mothers or fathers of families who cannot go away in the heated season, to put in as much of their time as possible in these camps, and to take their children with them if they so desire, and likewise supply them with plenty of proper food." I add here that anent to this open camp plan, it has been decided that sixty school yards for playgrounds will be kept open this approaching summer for children in charge of trained teachers.

Director of Health and Charities, Dr. Neff: "The present Tuberculosis Exhibition has emphasized the fact that consumption is particularly a disease of the poor and ignorant. Its chief breeding places are dark, unventilated tenements in the back courts and reeking alleys. It is impossible to cure incipient cases in such environment and conditions. Their only salvation is to get them away from their homes and into the open air, with proper rest and ample diet to build them up. This to considerable degree could be accomplished by the city camps which Mayor Reyburn proposes, and which would be in effect a free sanitarium. The city must take care of these people and protect itself from the disease."

Dr. Lawrence Flick, of Phipps Institute: "Much as we have done for public enlightenment on tuberculosis it does seem that a great many people still cling to the old idea of heredity. We have cumulative evidence that the child does not inherit tuberculosis, but that children of tuberculosis parents are more immune to the disease than were the parents. Marriage is an inalienable right that cannot be abrogated. Tuberculous persons if denied the right would suppress the fact that they had the disease, and, instead of taking the precautions necessary for the protection of others, they might become a greater danger to those about them. In this exhibition the public can learn the truth concretely and see the simplicity of it. Clean houses, clean lives, fresh air, good food, neighborliness and brotherhood are the whole story."

Dr. Jacobi, of New York: "Tuberculosis is a frequent disease among the young. I came from New York to do some one good; but I don't believe it is going to do this throng of children good to stay in this stuffy place and listen to me. I will let them go out to play. Children of tuberculous parents are not necessarily infected, but are predisposed to it because they inherit defective organs and physical formation. Of 230 cases of pulmonary consumption treated in a dispensary of my acquaintance within the last six weeks, twenty-two were children from six to sixteen years old—nearly ten per cent. A large majority of tubercular illnesses in children occur in the bones. The disease arises in many cases from infected milk. It has been proven that general fatal tuberculosis—even pulmonary consumption in exceptional instances—may result from the ingestion of tuberculous milk into the diseased or into the healthy intestine of the small child. The more we learn of tuberculosis the more we appreciate the possibility of contagion, but also the possibilities of escaping it. It is not hereditary. The only case I ever saw in what mistaken people call a long life dates back to the ante-bacillus period thirty years ago. A concomitant cause of tuberculosis is scrofula. That name means an extreme vulnerabality of the skin, and mucous membrane, mostly in infants and children. Skin disease, such as eczema, swollen glands and lips and nose, running ears and eyelids, with tendency to ulceration and slow recovery, that was what was called scrofula. Sometimes forerunners of tuberculosis or pulmonary consumption. In the light of modern knowledge we now know that germs will stick only to sore membranes, and may thus cause consumption by being carried inside."

Dr. Watkins: "Consumption is a workingman's disease and costs the working people of Pennsylvania more than $50,000,000 a year in funeral expenses, doctor bills, drug bills and loss of wages."

Prof. Graham: "Tuberculosis attacks the abnormal, not the normal. If every mother will see to it that her child is normal, up to standard, not weakened by ailments and malnutrition, she will protect it from tuberculosis. If the tissues are strong enough to resist the invasion of bacilli the child is safe."

"University Day"—large numbers of students from private schools and higher institutions of learning. Dr. Illman: "Ignorance has been the pre-eminent cause of tuberculosis. Were this not so, the public would not expectorate on the open highway, nor serve friends or customers with tubercular meat or milk, and live in closely crowded streets and badly ventilated rooms." Prof. Fussell urged young doctors to not drug their patients. Dr. Faries laid special emphasis on the danger of giving children drugs when outdoor exercise will do more good: "because exercise is a natural means of altering, strengthening and developing the different tissues of the body; while drugs are unnatural, and employed to change pathologic and physiologic conditions. By exercise every organ and tissue in the body receives new blood, blood greatly benefited when auxiliary conditions of diet, sleep, ventilation, clothing and sunlight are added."

Miss Sanville, secretary of Consumers' League, in plea for fresh air ventilation for street cars: "It were better that the door should be opened and passengers face the cold, than that passengers in health be exposed to infection from others who have tuberculosis. Landlords who seek to utilize every inch of space in their congested tenements, are to a large extent responsible for the spread of the disease among the poor. In damp basements and interior rooms where the rays of the sun never penetrate, consumption finds its victims by the hundreds, and in these surroundings it is virtually hopeless to fight against it."

Mrs. Falconer, Superintendent Girls' House of Refuge, who has adopted the fresh air principle at that institution: "In our home, all the girls either sleep out of doors or with all the windows of the dormitories raised. In the middle of winter we are out in the open, and we don't get sick. Occasionally the cots become damp, but that is easily remedied, and none of the girls catch cold. We should persuade people to believe there are worse things than draughts, and that fresh air will not give you colds, and you will greatly aid the campaign to wipe out disease."

Dr. Solis-Cohen, in interest of advanced cases: "It is from these far-advanced cases that infection usually spreads. They and their families, when poor, as are most of them, are unable to take the necessary simple precautions. Sometimes these persons work until they are no longer able to keep on their feet. Wards set aside for such in hospitals should be special wards. The tuberculous patients should not be received into the general wards of the hospital."

Dr. Welsh, late Secretary of International Tuberculosis Congress, Washington, D. C., concerning employes of department stores: "All that is necessary to cure the disease is to put the body in good condition and nature will do the rest. Tuberculosis is not produced by colds anymore than is small-pox or typhoid fever, but colds may run down the system and thus cause the person to be more susceptible to the disease by coming into contact with it."

"Italian Day"—noted for its crowds of Italians, Russian Jews, Poles and others of foreign birth. The lectures were delivered in Yiddish, Russian, Polish and German tongues. Count Sabione said that the condition of the Italian people in America is superior to that in their old country; they are in far better position here to be educated as to how to eradicate this disease. Dr. Venezialo, speaking in his native tongue: "People say dirt is beneficial. So it is under proper conditions and when out in the country. But cleanliness in your homes and in your habits will do much to stop this disease. Keep clean, sleep with the windows raised, select wholesome food to eat, sleep seven or eight hours daily, and you will be cured if you have consumption, and you will be made immune if you haven't."

Rev. Dr. Bolton, in sermon: "In the past consumption was thought to be an unavoidable scourge be-

queathed to children by their parents. We know now that this is not the case, and that the use of fresh air in the home, and where employed, and cleanliness of such locations can prevent the disease from ever appearing." Rev. Dr. Lee: "Who is responsible for tuberculosis? There are persons who recognize preventive responsibilities. But there are also thousands who, like a bivalve shut within a hard shell, indifferent to public welfare, or even to the danger which is threatening their own homes. They confine their interest to a narrow range of private gain, of personal enjoyment and selfish ease." Concurrent with the Exhibition the learned Rabbi Krauskopf delivered a telling discourse to his congregation. A brief abstract here only: "Reason enough there is for our being ashamed. In tuberculosis we have one of the oldest known diseases—a disease known and described by Hippocrates as far back as the fourth century before the present era; a disease known to be entirely preventable, and, to a considerable degree, curable. And yet with all this knowledge 1,095,000 deaths occur throughout the world every year from it. After more than two thousand years of acquaintance with this dread disease, what lesson should have been better learned by now than that the homes of the poor should become the special charge of the municipality; that, even if but for selfish reasons, the poor should be provided with homes that are well lighted, well ventilated, well equipped with means of healthful cleanliness, and placed under such municipal surveilance as shall prevent, as far as possible, the development of this disease. So long as one filthy tenement remains in which tuberculosis is suffered to breed, no place—and be it ever so hid by towering walls —can think itself free from danger. So long as cattle are permitted to breed the deadly poison in polluted stables, and to transfer it through their milk and meat to our homes, no family, no matter how large its wealth, is sure of escape."

Moved by impetus imparted by this Tuberculosis Exhibition, warmed by quickened sanitary sense, a body of Jewish gentlemen promptly planned for the establishment of a Sanatorium for Jews afflicted with consumption. A farm of seventy acres, ideally located, 580 feet above sea level, was found and purchased in one day. Alterations in the improvements will at once be made for the service of patients. Shacks will follow as needed. Beds will be free for any deserving consumptive of the Jewish race. Light work will be furnished for men and women on the place if able to take exercise. Advanced cases may be cared for at the Jewish hospital in the city.

On "Pathological Day" at the Exhibition Prof. McFarland cleared the point: "As tubercles in an organ increase, they cause destruction of the infected organ. It is the softening of the lesions that destroys the organs, and destruction of the organs kills the patients." "University Day" brought large numbers from higher institutions of learning. Prof. Fussel urged young doctors to not drug their patients. Dr. Faries laid special emphasis on the danger of giving children drugs when outdoor exercise would do more good: "because exercise is a natural means of altering, strengthening and developing the different tissues of the body; while drugs are unnatural, and employed to change pathologic and physiologic conditions. By exercise every organ and tissue in the body receives new blood, blood greatly benefited when auxiliary conditions of diet, sleep, ventilation, clothing, bathing and sunlight are added." "Chinese Day": Dr. Tsin Li addressed his Celestial countrymen in their native language. But we will listen to a few words by Dr. Wood, who also addressed them: "To help you see that the simple methods here taught you are the best and indeed the only remedy, please note this important truth. Modern medicine has given us nothing to compare with it in value both to doctor and patient. THE BODY CURES OR KILLS ITSELF. The remedies that ultimately overcome disease germs are manufactured within the body. There is an enemy—it is the quack doctor, or the patent medicine man hungry for your money. He knows well that a sick man is a scared man. He finds men with slight colds, and convinces them they have consumption, and must buy the stuff he sells."

"Store Employes"—Dr. Irwin: "To stand eight to ten hours a day in a poorly ventilated store or factory that has not been properly cleaned and with dust flying around means acquiring tuberculosis. One contact of inhalation does not count. It has to be constant contact or inhalation over a long period. If tired or fatigued they are more liable to acquire the disease. All cleaning and dusting should be done before you start work, and a place of rest should be provided." Prof. Daland: "Those suffering from active tuberculosis should not marry. Healthy persons of tubercular parents may marry. Over-crowding, dirt, dampness and darkness promote development of tuberculosis. Removal of the ordinary sash window from the bed-room, and the substitution of one hinged like a door, which should be kept open all the year round, while the healthy adult is asleep will prevent the disease." In defense of school children—Dr. Egbert: "The present system of training the mind at the expense of the body presents many perils. We are just beginning to realize that the physical part of the child must be definitely considered in its school education. The greatest death rate is between the ages of 20 and 30, which shows that in their school days these victims were over-worked and overtrained mentally, making their resisting powers low. School authorities begin to realize that the establishment of playgrounds and outdoor gymnasiums will prove of more service to growing children than do excessive studies."

Dr. Solis-Cohen repeats in self-defense: "It is not such an easy matter to kill the tuberculosis germ once it has entered the system. You can't by vaccination become immune, but you can, by having plenty of fresh air, eating good food, taking plenty of baths, and getting sufficient sleep increase the resistance in your system which will kill the germ." I submit that the doctor would have talked in better reason if he had put it: "which will prevent any germ from being developed."

"Electricians' Day"—Dr. Folz: "Leave fear behind. Perfect knowledge casts out fear. We now know how to order our lives so as to defy tuberculosis. The gist of the whole thing is cleanliness, even daintiness in every relation of life, for ourselves and for our food-making animals. The latter must be treated with clean barns and pastures instead of the filthy quarters where many farmers have been keeping them. Cleanliness in the air we breathe, for only dirty air will carry the disease, and cold air never gave a cold except in the sense that the momentary depression allowed the sprouting of the seed already planted. Clean living, clean eating, clean breath-

ing and clean thinking defy disease."

Dr. Craig: "As a great proportion of one's time is spent in a place of employment, any conditions in the workshop, or office, which tend to impair the health naturally have direct influence upon the well-being of those working in these places. It is very important that one's surroundings in the workshop and office should be thoroughly hygienic."

John Mitchell, great labor leader, on "Labor Union Day." "The eradication of consumption cannot be put up to the men of the medical profession alone. The workingman must take a hand to throttle the disease in its incipiency and to remove and avoid the causes that predispose to it. Consumption is no longer considered hereditary: it is a self-made contagion. Unionism should lend its aid. Shorter hours, better wages, with consequent better living tend to make one immune from tuberculosis. When I was a boy, working in the mines, we didn't open our bedroom windows in cold weather—we didn't know the value of fresh air. There are people who will tell you that whiskey will help the consumptive. Any reputable doctor will tell you that it is the worst thing that an affected patient can take. It not only destroys the health of those who use it, but it destroys them in every other way."

"Architects' Day": Frank Miles Day, who presided at evening meeting: "Architects when drawing plans for hospitals consider too much that they are designing a building, and forget that what is wanted is a place for sick persons to get sunlight, fresh air and cleanliness." Grosvenor Atterbury, of New York City: With lantern slides made a plea for the establishment of more playgrounds. Proper housing of the poor under conditions which will not breed tuberculosis, he said, is the great problem now confronting the architect. He advocates the scientific distribution of population by means of town and village planning. He showed slides of tenements in England and Berlin, where provision is made for tenants to obtain air while sleeping and where there is room for the children to play in the open, as opposed to our tenements, with several families in one room, no light, except from a dirty alleyway, with children playing in the refuse and garbage of the street. Mr. Gulick, president of the National Playground Association: "In childhood organic vigor, which builds up strong tissues to resent the development of bacilli, is established by out-of-door exercise. Children who work in factories, who are confined in houses or rooms in which there is little or no sunlight, are the kind who show lack of fresh air vigor. The Supreme Thing About Life Is Life Itself. Fresh air is one of the main factors in maintaining life of a vivid and worth-while character. Children should have playgrounds provided for them. It is against the law to play in the streets. Much disease is carried by dust, which is found particularly in the streets. A third of all fatal accidents to children happen because they play in the streets."

So earnest is the present activity of interest in reducing the spread of consumption in Pennsylvania, that a bill has been introduced in the Legislature providing for an appropriation of $500,000 a year to induce hospitals throughout the Commonwealth to set aside separate wards for the treatment of advanced cases of consumption. Out of the amount named, hospitals which make provision for the care of tuberculosis in its advanced form are to receive one dollar each day for each patient. The object is to remove dangerous sources from the home, and at the same time furnish sufferers with care near their relatives. By this means it is believed more than 5,000 advanced cases each year might be isolated, and in ten years tuberculosis may be practically arrested.

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RETROSPECTIVE

Iron in Treatment of Nervous Patients.—The advantages of one form of iron over another, lead us to select each form with reference to the temperament of the patient, as well as to the nature of his disease. The diuretic properties of Basham's mixture are known. So are the hematinic properties of Blaud's Pill. Very little has been written on the idiosyncrasies of patients regarding iron.

There is the excellent Tincture Ferri Chloridi. For children, especially after the acute exanthemata, indeed, during the course of varicella, measles, or scarlatina, we find drop doses, diluted, give good results. But this preparation is contraindicated in the aged, in cases occurring in people of torpid liver, and in those who suppurate easily. The citro-chlorid of iron is often possible, when the chlorid is refused, and is better in cases in which intestinal activity is subnormal.

Blaud's Pill is to be chosen for many cases of amenorrhea. Do not order it for cases in which there are symptoms of headache, jaundice, and a small or ill-developed osseous system. For such patients the recipe of the National Formulary, namely, the Liquor Ferri Peptonati cum Mangani is excellent. This does not lessen the action of the bile or the enzymes of the pancreas; manganese is a chologogue.

The Liquor Ferri et Ammonii Acetatis is not to be ordered unless hepatic conditions warrant. Broken doses of Epsom salt, well diluted should precede Basham's Mixture, if there is lessened peristalsis. Ferrum Reduction is the least astringent iron preparation, and offers much advantage. There is an objection to it in cases of people who suppurate easily. Combinations of iron and arsenic are employed in anemia associated with impaired skin action, and reduced activity of ectodermic derivatives.

Iron and quinine combinations are employed in cases in which there are changes due to disorders of the iron and the iron vehicle. Citrate of iron is to be chosen for cases of full free circulation, blond or sanguine temperament, and suffering from secondary anemia.

The importance of manganese, with its stimulating action on the bile, may be calculated in several ways, although the precise value of manganese in the animal functions is unknown. The combination of iron citrate and manganese citrate is excellent, both salts being freely soluble. In cases of cardiac lesion associated with anemia, and in people of bilious temperament, dark hair and muddy complexions with an icteric tinge from time to time, the citrates of iron and manganese seem indicated. Cardio-renal cases may require less iron and its administration with manganese.

Iron may be given in pill form as Ferrum Reduction, with Aloes. The latter controls in a measure the tendency to constipation. The objection to Aloes, or Aloin, in uterine complications renders this pill less desirable as a continued prescription. Iron may be given as re-

duced iron with rhubarb. This is better than the aloes combination. To the iron and rhubarb is often joined extract of belladonna, or hyoscyamus, and extract of nux vomica, as these are useful in lazy intestinal conditions. The prescription may be written:

℞ Ferri reducti ..... 2.00 gms.
Ext. belladonnae ..... 0.20 gms.
Ext. nucis vomicae ..... 0.20 gms.
Podophyllin ..... 0.20 gms.
Ext. gentian ..... 0.20 gms.

M. Fiat massa dividenda in pilulas numero xvj.
Signa: One after each meal.

Some nervous patients do not bear nux vomica, and for them this may be omitted. Pure blonds, as a rule, do not take large doses of belladonna. Their pupils dilate readily under its administration and they show increased pulse rate. The single tonic, hematinic and laxative recipe may have to be divided. Patients may prefer one pill as the expense of compounding is less. On the other hand, there is an incomparable advantage in being able to vary the laxative elements from day to day as indicated, so that we may order:

℞ Liquor ferri peptonati cum mangani, N. F. ..... 120.00 gms.
Signa: One teaspoonful in water after each meal, and,

℞ Podophyllin ..... 0.25 gms.
Leptandrini ..... 0.25 gms.
Ext. physostigmatis ..... 0.25 gms.

M. Fiat massa dividenda in pilulas numero xxiv.
Sig.: One or two after each meal and at bedtime, or,

℞ Ext. casc. sagrad. ..... 2.00 gms.
Podophyllin ..... 0.20 gms.
Ext. gentian ..... 0.20 gms.

M. Ft. mass. div. in pil. no. xxiv.
Sig.: One, two or three at bedtime. Laxative.

The choice of a laxative in all cases, certainly in nervous cases, is highly a matter of concern. Nervous cases, such as paraplegia, locomotor ataxia, and paresis, require constant attention. Functional nervous cases such as neurasthenia and hysteria are well treated by dietary and hydrotherapeutic measures. These, too, may need medication to initiate good action of the intestinal motor apparatus. Such a simple agency as pure, fresh lemon juice in water, on an empty stomach. I have ordered such a simple thing as a teaspoonful of New Orleans molasses in a glass of cold water, on awaking. This acts very well in cases in children.

Good cornmeal will often feed the patient's nerves and operate effectually upon the "first ways."

What types of nervous patient require care, unusual care, in iron therapy?

1. Young girls from ten to eighteen, of frail, bony structure, small for their age, and having a tendency to catarrh, especially of the bile passages. No one should order the tincture of the chlorid of iron for them. Indeed, iron should be given with manganese to them.

For many reasons pill or capsule should be avoided. A good liquid preparation, or a powder of the citrate of iron and manganese is best.

2. Boys, anemic and undersized, but of a clear complexion. To them may be given the tincture of the citro-chlorid of iron in doses of 3 to 7 drops, well diluted, through a glass tube, after meals.

3. Cases of nervousness due to anemia following La Grippe, tonsillitis, diphtheria, etc., may require iron. Children may do well with the tincture of the chlorid of iron, and in combination with syrup of lemon, spirit of nitrous ether and water. Tonsillitis in certain neurasthenic cases may indicate strong hematinics. Iron lactate, with other drugs, may be needed. Manganese is especially valuable in dark or brunette types. In blondes, manganese in the form of the citrate may be given independently of iron to encourage hepatic activity. Reading such directions as to blond and brunette type may excite a smile, thinking of the mysteries of ancient charm and dream books. Seriously, do we not recognize, again and again, the occurrence of ready suppuration in women of rather yellow skin and dark or coarse black hair? These have much at fault with the liver, whose carbohydrate and hydrocarbon metabolism is difficult. Whenever we recollect the connection of sugar, diabetes, hepatic and pancreatic function and suppuration, we must admit that temperament is a real factor in each disease equation.

Some blond types with scoliosis and hepatic torpor are associated with peculiar idiosyncrasies. They may be unable to take quinine, salol or the salicylates. They may react violently to local applications of solutions of phenol.

Some brunette types, of muddy complexion, are apt to develop nervous symptoms in the puerperium. Iron aggravates them, although they may be distinctly anemic.

4. Iron seems ill borne in the anemic states of neurasthenia of light haired patients. When iron does not act well in neurasthenic cases, first be sure that the anemia has relation to the neurasthenia. Neurasthenia, the outcome of a flat plantar arch, or an astigmatic eye, and causing secondary anemia from loss of nervous energy and mental disinclination to right dietary and general hygiene, will certainly not yield to iron. But a simple anemia, or one due to malarial cachexia or some other malady, may coexist with pes planus or eye strain. Choose the form of iron which the type of patient may assimilate, and correct by orthopedic measures the several physical defects.

There is some importance in deciding what blow to strike first. Whether to relieve the anemia, or the neurasthenia. Any leakage of nerve force ought to be regarded primarily. Afterward we may attack the problem of repairing past injury. But to what end will these repairs work if the original defect is still operative?

5. It is probable that iron is less well borne in patients as they advance in years, owing to changes in their hematopoietic tissues, and the frequent hepatic difficulties.

6. When rheumatic anemias occur in cases of marked hepatic insufficiency be careful in giving iron. The lactate or peptonate is best.

7. Glycerophosphate of iron may be employed as a reconstructive. Proprietary remedies containing glycerophosphates unfortunately contain strychnine. This renders the combination absolutely worthless except in the range of cases free from epileptoid tendencies. When insomnia exists, due to excitement the strychnine intensifies the distress of the patient. Only that form of insomnia due to relaxation will put out the white flag on the appearance of strychnine.

So with iron. Any anemia which is derived from

general metabolic insufficiency may be relieved and equilibrium restored if we exhibit the proper iron salt. But when iron is entering the body and is not assimilated, some real difficulty may have to be laid bare and corrected, or the administration of iron will harm the patient.

8. Frequent small doses of iron are excellent during convalescence from the acute exanthemata, La Grippe, and in neurasthenia. Whenever the patient is in a condition to need frequent nourishment, the administration of small doses of organic iron as lactate or peptonate may be followed.

9. What causes headache from iron administration? It may be due to an astringent action upon the liver. It may be due to a disproportion of iron in the blood stream. Or it may be due to nervous reflexes. When the tincture of the chlorid of iron is chosen it does not cause headache if suited to the temperament of the patient, or until it has been heavily exhibited.

10. The tincture of the chlorid of iron offers a splendid means of combating the systemic and nervous effects of erysipelas.

Epsom salt should be freely given during the exhibition of this remedy for erysipelas.

In any indication requiring iron, if there is an acute fever, the choice is upon the tincture of the chlorid, and if added to the fever there is some septic reaction as in malarial attacks, the citrate of iron should be tried first.

Chlorosis, with its need of iron, seems to indicate either an organic iron, such as the solution of the peptonate, preferably reinforced by manganese. Good results from the nascent carbonate of iron are known to the practitioner.

The indication for iron is of three sorts:

1. When iron is not selected by the animal body from its usual food supply. Here we must look to some easily assimilable preparation, one suitable to the illness of the patient and in harmony with any temperamental difficulties.

2. When iron is being used up more rapidly by the animal body. Here we have a simpler task, and one easily met by supplying more iron for the eager tissues.

3. When there is some generalized pathologic condition to be combated by a reinforced oxygenation. Erysipelas is an example of this. The trophic state, nervous in nature, is best treated with the tincture of the chlorid during febrile stages, and towards convalescence, a change to the peptonate or lactate. The citrate of iron constitutes, with the citrate of quinine, excellent medicine.

Many Suicides.—Vienna reports 480 cases in its population of two millions—the highest number yet recorded. The victims varied in age from a seventeen-year-old boy who threw himself out of the window owing to a bad mark received at school, to an octogenarian who ended his life because he was "tired of it;" (he might have waited a trifle longer and died comfortably and respectably). More than three times as many men as women killed themselves; but nearly three times as many women as men made unsuccessful attempts at suicide. The men were mostly for hanging and the revolver; the women for leaping from a height, drowning and poisoning. This latter is odd; for such deaths are rather "mussy;" and women desire to look well, even after death. Among men sickness came first as the motive, then financial worries, insanity and family troubles, unhappy love coming last as a motive. Among women, on the other hand, disappointment in love was the pre-eminent motive; then came family troubles and poverty.

Carbon Dioxide to Save Life.—A new life preserver, the invention of J. S. Nowotnick of Hamburg, differs very materially from previous types, and combines several novel and valuable features. A hollow belt of rubber, five and one-quarter inches in diameter, has its ends of plates of the same diameter, furnished with the requisite attachments, so that they can be quickly and easily hooked together beneath the arms. Closely fastened to the upper surface of the belt is a small metallic cylinder filled with liquid carbon dioxide; on turning a tap the gas escapes at once into the best, volalizes and inflates it to its fullest capacity of twenty-seven and a half quarts; the whole operation requires thirty seconds. The buoyancy of such an inflated belt is uniform at all points, so as to allow the wearer a perfectly vertical position in water. A cork belt of the same buoyancy would weigh over twenty-six pounds.

Cancer is not a contagious disease, in the opinion of von Hansemann, of Berlin, in Umschau (Feb. 8, 1909), who finds misleading the apparent increase in this disease as indicated by comparing the latest statistics with those of two or three decades ago. For symptoms formerly mistaken for other diseases are now diagnosed with unfailing accuracy as internal cancer. Superficial cancer, visible and easily recognized, has only increased in proportion to the growth of the population. The recurrence of cancer in a family, a town or a street is, in von Hansemann's belief, no proof of its contagiousness." There are no cases on record in which cancer has been absolutely proved to have been communicated from one person to another by contagion. In the case of other contagious diseases such as tuberculosis it has been observed that hospital surgeons or nurses have occasionally become infected by patients. This has never been observed in the case of cancer. This belief is now shared by practically all the members of the central committee for cancer research." The Lancet has moreover recently given the opinion of Dr. E. F. Bashford that cancer is not transmissible; of 669 patients of whose families trustworthy records could be obtained only 58 of the fathers had died of the disease and 114 mothers.

Undescended Testicle.—F. N. G. Starr (Am. Surg., Sept., 1908), in cases with the testicle in the canal, at the external ring or outside it, makes a short incision over the external ring, secures the testicle and dissects the cord free until sufficient slack is obtained, by blunt dissection with the fingers he makes a pocket in the scrotum to receive the testicle; then he fastens this organ by catgut sutures passing through the tunica albuginea to loops of a plaited silver wire suture two or three inches long, places the testicle in the scrotum, allows the ends of the wire splint to project through a small incision at the bottom of the scrotum (where they are fastened by bending back) and sutures with catgut the upper end of the splint to the periosteum covering the os

pubes. The wound is closed and the wire splint left in place twelve days; when it is easily withdrawn by traction upon the lower end.

Car Sickness is akin to seasickness, yet differing in some particulars from the latter. In seasickness one rarely finds the very young or the very old affected; seasick children recover quickly and play as usual; but even a baby may suffer in its perambulator from car sickness, nor are the very old immune. The symptoms of both disorders are very much alike—pallor, rapid pulse, clammy skin, giddiness, nausea and vomiting; women are more subject in both than men; the tendency to car sickness seems to be handed down from generation to generation. Eye strain may be a predisposing factor to car sickness, such patients may not suffer if they keep the lids closed. One easily understands that when glasses are needed the whole bodily equilibrium suffers even under most favorable conditions; but when there is added the vibration of the cars and the temptation to watch passing scenery the development of car sickness is practically inevitable. One may be a good sailor and yet suffer from car sickness. The symptoms of the latter may be very violent, resulting even in collapse.

How the Frog Changes Color.—The chameleon, states the New York Medical Journal, changes his hue with his environment. Who could a short time ago venture to point out all the molecular and ethereal vibrations whereby the chain of action is made complete between external environment and peripheral tissue change. Yet Salland found that the pigmentary changes by virtue of which the frog harmonizes itself more or less with the color of its environment are governed by two sorts of nerves. It results from the action of two reflexes, both originating in the retina; and Salland has been able to map out the paths from the brain to the periphery by each of the reflexes. The process is most delicate. First the green foliage, causing vibrations in the ether in certain wave lengths, sets up certain molecular vibrations in the retina which, translated to the brain, issue forth at the periphery in such form that neither the skin nor the pigment granules in it are changed irreversibly, but certain molecular combinations are made for the time, or certain intramolecular changes of the atomic structure are set up in the pigment for the time, by virtue of which a protective color is given to the animal.

Routes of Infection in Tuberculosis.—J. Bartel, of Vienna, stated: In animals we can demonstrate in the lymph glands, in addition to the manifest tuberculosis with specific tuberculosis changes, a stage of "lymphoid" tuberculosis in which the glands either show mainly lymphocytic hyperplasia or are apparently unchanged; the existence of such a lymphoid stage can be demonstrated in man also. Attempts to immunize done according to the observation of a possibility of a cure of the tuberculous infection in the lymphoid stage, gave in combination with reinfection the following result: Signs of increased tendency toward, then of increased resistance and finally of complete immunity; process of complete cure in organs afflicted with manifest tuberculous changes; mainly manifest tuberculosis of the lungs with the bronchial lymph glands and cavities in the lungs, but also isolated manifest tuberculous disease of the lungs, the portals of entry remaining perfectly intact, and all opportunities of direct lung infection being excluded. Under certain conditions, therefore, tuberculosis is of the character of "cryptogenetic" infection. The infection from pharynx, stomach and intestines is, so far as we can now judge, far more frequent, particularly in early life, than has generally been considered. It is difficult to decide whether deglutition or inhalation is the more frequent mode of infection.

The prostate, though a sexual organ in health, is essentially a urinary organ in the diseased state (A. L. Wolbarst, Am. Jour. Med.). Urinary symptoms are most often directly due to prostatic disease; any pathological lesion of the prostate which increases its size favors more or less interference with the urinary stream. Inflammation of the prostate is always accompanied by urinary symptoms; the genital symptoms are less marked. Regarding gonorrhoea, the prostatic urethra is the most important part of the urinary tract and the favorite seat of chronic urethritis; it is the medium over which the inflammation travels from the urinary to the genital tract. The prostate is solely responsible for the important urinary conditions consequent upon its senile hypertrophy. Prostatic concretions may lodgs in the bladder and act as the nucleus of larger vesical calcoli. Chronic contracture of the bladder neck, neuralgia of the prostatic urethra, prostatic tuberculosis, malignant prostatic disease, prostatic cysts and trauma of the organ are all evidenced by their effect on the urinary function. These numerous urinary affections justify our considering the prostate as a urinary organ only second in importance to the kidneys.

Contagions "Running Through a Family."—Dr. David Riesman, of Philadelphia, in an address at the Polyclinic Hospital Training School, reviewing the history of nursing, denied that when one of the so-called diseases of childhood had once gained foothold in a household it was necessary or advisable for it to "run through the family." He wisely urged the graduate nurses to combat this idea in their future activities. Nor need all children have measles, chicken pox, pertusses and scarlet fever; if one child in the household is axicted it is not the best thing to do to expose them all, "so that all the trouble may come about the same time and the doctor's bill be lessened by reason of wholesale services." Children need not have all the "diseases of childhood;" by sheltering them sensibly they may eseape some of them; one can never tell whther even the mildest may not at times be fatal, or leave sequelae that may cause lifelong suffering and regret. The love of fresh air, moreover, should be spread among the people; here the nurse should heartily second the doctor's advice; night air is not harmful; stuffy houses do more harm than winter snows or autumn rains. The knowledge is gradually growing among the laity that colds are contagious; that ordinary sore throat may be communicated; the subject of diet should be better understood, as also the drinking of water, which is one of the best things in nature when taken at the right time, in the right quantities. It then promotes health and lessens the need for drugs.

Heredity in Consumption.—Surg. Gen. S. von Unterburger, of St. Petersburg, finds the difference between the infectionists and the hereditarians regarding the origin of consumption to be relative rather than active, depending upon emphasis laid on the organism on the one hand, and on the carrier of infection on the other. For the genesis of this disease as of all infections a soil (the body) and an exciting cause (the B. tuber.) are necessary. The latest researches in embryology show us: first, that the chromosomes in male and female ovum-cells are of the same number; and, secondly, that they vary in quality. Chromosomes and their manifold subdivisions correspond to the separate qualities of the fully developed organisms; all chromosomes in the human species are inherited, either in manifest or in latent form; we thus explain the phenomena of atavism. All tendency to disease in an individual is to be regarded as hereditary, whether or no the corresponding disease can be traced back each time to the parents or ancestors. The tendency to consumption is inherited and may be developed by various agencies. Every man over thirty has old remains of a tuberculous infection. Evidently, then, the human organism can easily overcome the tubercle bacillus; we thus get indications for our treatment; we strengthen the organism by hygienic and dietetic means, the details of which have been worked out by the large sanatoria. We must seek to destroy the bacillus as far as possible; but it is utopian to imagine they can all be annihilated. Our main endeavors must therefore be directed to strengthening the body.

Therapeutic abortion is a matter that requires almost more than human knowledge and insight to know whether it is really indicated. Hyperemesis gravidarum is the condition that usually calls for intervention. Writers have classified this distressing condition into three types depending upon the causes. These are reflex, neurotic and autotoxic. The latter is perhaps by far the more common. The palliative measures that may be employed tentatively are recumbency of posture, drugs, diet, etc. Also the correction of a displaced uterus, reducing a congested cervix, and healing up an ulcerated condition. Free saline catharsis and high colonic flushings may clear up some of the symptoms. If the vomiting continues in its persistency and is positively known to the doctor, if the woman is growing weak and emaciated with a weak and thready pulse, and all means of getting nutriment into her system, including nutrient enemata, prove unavailing, then the question of terminating the labor must be considered. If the case demands that the uterus be emptied. this procedure must not be postponed until interference would further jeopardize the woman's life. In these cases the physician should study both sides, without bias or prejudice. There is danger if he does and danger if he doesn't. He should carefully and conscientiously endeavor to find what action or non-action will give the patient the best chance to live. It should ever be borne in mind that possibly the woman may be exaggerating her symptoms, and that she is likely to be appearing at her very worst while he is in her presence. Women fool men right along in daily life, and doctors are men. He should weigh symptoms painstakingly, and render his opinion from the objective rather than the subjective symptoms. On the other hand, the ultra-conservative are disposed to let women die of toxic conditions superinduced by pregnancy rather than interfere. Every case of persistent vomiting in a pregnant woman if accompanied by symptoms which indicate sepsis somewhere should have active palliative treatment. If there is not an amelioration in a few days, measures looking toward something permanent must be decided upon.

Incipient Tuberculosis.—Dr. Herman M. Biggs has, at the request of the New York Charities Aid Association, prepared for the laity the following valuable resumé of the early symptoms of pulmonary tuberculosis, any of which should suggest consultation with a physician: A cought lasting a month (except in pertussis); poor appetite (especially in the morning); indigestion; loss of weight and strength; pallor; generally "run down"; hoarseness lasting several weeks; spitting, especially in the morning; night sweats; spitting blood; fever in the afternoon, shown by flushed face and tired feeling. Any, several or all of these symptoms coming after a severe cold, grippe, bronchitis, pertussis, measles, typhoid fever, or any other acute disease, may indicate tuberculosis. Two or three or more thorough physical examinations should be made. A negative sputum examination is not at all conclusive if other symptoms are present. The difficulty of diagnosis in incipient tuberculosis is emphasized.

A Medical Graduate of '69.—Dr. John A. Wyeth, president of the New York Academy of Medicine, spoke with much humor at the recent meeting of the Association of American Medical Colleges of his medical course at the University of Louisville, where he was graduated in 1869. "Pete procured us our cadavers; where, we did not trouble ourselves, as long as we were well supplied." He was called "St. Peter, upon which rock was founded our anatomical college and who possessed the keys of Cahill Cemetery." One night Peter was interrupted in his occupation by the discharge of two barrels of buckshot which lodged in various parts of his anatomy. There was consequently great glee at the university, and at the end of the term every student carried home for a memento one of the shot which he had picked from Pete. In those days there were no entrance examinations; every man who could read and write was eligible for a doctor's course, which was then of two years. When he graduated Dr. Wyeth had never looked in a microscope. The first thing he did was to expend $25 on a surgical set and $8 for a pair of saddle bags, in which were among other things, a pair of extracting forceps. He had not been instructed in their use, but assumed that it was only necessary to get a good hold and pull. Notwithstanding his diploma Dr. Wyeth thought long and seriously about his fitness to take human life into his hands, and finally decided to let the world take its chances as it had before. He did not, however, have the moral courage to hang up his little gilt sign in the daytime; so tacked it on the door at midnight. Two months later, at the same hour, he took it down again and decided that he needed a lot of clinical instruction before he would know enough to practice.

Mrs. Bull's Memorial to Dr. Bull.—This memorial to her husband will take the form of a hospital for the treatment and study of tuberculosis. The amount of the endowment, the location and other details have not yet been decided upon.

MISCELLANY

In London there are about 1,800 charities, dispensing fifty millions of dollars annually.

Cremations in Great Britain have during 1908 aggregated 795 and have exceeded the record of any previous year; within the last ten years the annual number of cremations in England has considerably more than doubled.

The Trachoma Germ Found? Prof. Greef, director of the Berlin Eye Hospital, announces his discovery of the germ responsible for trachoma; his experiments upon anthropoid apes have convinced him that this disease is contagious only in its early stages.

A National Health Bureau.—Dr. C. A. L. Reed recently declared himself authorized by President Taft to state that the latter would use his utmost influence to secure from Congress legislation that will provide "a National health administration worthy of the name."

The Sleeping Sickness in Paris.—A missionary, of the Order of the Holy Ghost recently dropped unconscious, in the Luxembourg Garden, and was conveyed to the Pasteur Institute; here he was found to be suffering from trypanosomiasis, which he had contracted on the upper Ubanghi in Equatorial Africa.

Gonorrhoea.—Balzer, of the Hospital St.-Louis, Paris, speaking of prevention of gonorrhoea advises immediate toilet of parts externally, and the instillation of a few drops of a 2 per cent. solution of protargol. This must be accomplished before the germs may have passed the balanitic portion of the urethra. (Jour. des Praticiens, Oct. 12, 1907.)

Placenta Previa and Eclampsia.—K. Baisch (Münch. Mediz. Woch., Jan. 19, 1909) lauds the new operative treatment. Instead of the old maternal mortality of from 10 to 20 per cent. and from 70 to 80 per cent. fetal mortality, by means of vaginal Cesarean section all the mothers in a series of 40 cases were saved and all but three of the twenty-two children were alive at birth.

Diphtheria Spread by School Books.—A recent outbreak in a school in the Raynham district in England was traced to a batch of school books that had not been disinfected after a similar epidemic about six months previously. This time the schools were closed, the premises thoroughly disinfected and sprayed; and all the books in use at the school in which the disease originated were destroyed.

Typhoid Fever Without Intestinal Lesion.—This recognition marks a step in our medical progress. Sacquépée (Le Progrès Médical, Febr. 6, 1909) shows how even one hundred years ago this occurrence was suspected, but with the discoveries of Banti, Widal, Chantemesse and others later we are able to prove what was merely probability before. Two cases are reported. The literature is carefully summarized.

Urinary Infection in Infancy and Childhood, states M. Lippe (Arch. Pediat., Jan., 1909), occasions acute febrile disturbance when this is not due to gastroenteric or respiratory infection. Atypical fever cases may prove typical by making an urinalysis (both chemical and microscopic). In high temperature cases, if physical signs of pneumonia do not develop, make a urinalysis. Enuresis may mean cystitis or cystopyelitis. Chills and fever with negative findings as to malaria, in the presence of a leucocytosis, calls for urinalysis.

London Snow.—The Lancet has analyzed this snow on a weekday and on a Sunday. The latter showed about one-fifth the amount of impurities present in the weekday snow. Whilst the weekday snow contained as much as 3.36 grains of sulphuric acid per ten pounds, the Sunday snow contained practically none. Thus it is chiefly due to the combustion, complete or incomplete, of coal that London owes its sullied air.

Gastric Neuroses.—The symptoms of various types are described by J. B. Deaver (Am. Jour. Med. Sc., Feb., 1909), who points out similarities and differences from organic gastric diseases. Many cases diagnosed as gastric neuroses are in reality appendicitis or gallstone disease. There should thus be the greatest care in diagnosis; since the latter diseases are amenable to surgery, whilst operation is not indicated in true neuroses of the stomach.

A Peking Medical College is sought to be established by the Chinese Emergency Appeal Committee, of which Sir Robert Hart, formerly Inspector General of Customs in China, is president. The idea is to provide for a thorough medical training on modern lines for the Chinese; it is also proposed to establish training colleges for Chinese teachers, with the co-operation of missionary societies. The plan includes the translating of the best Western literature into Chinese.

Fat Infiltration and Degeneration in the Kidneys. G. Klemperer (Deutsche Mediz. Woch., Jan. 21, '09) demonstrated in a young suicide that fat is liable to infiltrate into even the healthy renal tissue, fat particles found in the urine do not therefore indicate a grave diagnosis. Large amounts of fat in the urine, however, are a sign of a necrotic process in the kidney cells. During the necrotic process the lipard substances undergo some transformation (fat phanerosis), which renders them visible.

Milk in Liberia, states the Bakers' Weekly, is bought frozen; and for convenience it is allowed to freeze about a stick, which forms a handle to carry it by. The milkman leaves one or more chunks, as desired, at the customer's house. The children in Irkutsk, instead of crying for a drink of milk, cry for a bite of milk. One is warned to be careful, not to spill the milk, but not to break it. Broken milk has obviously the advantage over spilled milk that the pieces can be saved. A quart of frozen milk on a stick is considered a very formidable weapon. The milk is hanged on hooks, instead of being put in pans—so our esteemed contemporary informs us.

Erysipelas Treated by the Inoculation of a Specific Vaccine.—The most striking change noticed after inoculation of the streptococcus erysipelatis by G. W. Ross and W. J. Johnson (J. A. M. A., March 6, 1909), was rapid subsidence of the severe toxemia. There was, however, generally a spread of the local process for 24 to 48 hours after inoculation; but it was more brownish than angry in color, the swelling was less, tenderness less, and the margin began to fade. Ross and Johnson believed that the clinical course is as safe a guide as taking the opsonic index. "The more severe the case and the less satisfactory the clinical response, the smaller the dose"; ten million is used in severe cases to start with and twenty million in less severe cases. The inoculation is made away from the site of infection.

THE PROBLEM OF SOCIAL HYGIENE.*

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THE problem of Social Hygiene to which I shall direct your attention is the prophylaxis of a class of diseases which, from their origin in the "Social Evil," and their spread in the intimacies of social life are pre-eminently Social Diseases.

While these diseases are due to the invasion of microbes, and affect the human body, they are in a larger sense diseases of the social organism, and their danger to society far transcends their danger to the health and life of the individual.

What might at first glance appear a simple solution of this problem would be the correction of the immorality which is the cause of these diseases, but this would mean the arbitrary cancellation of certain factors which enter as component parts of this problem, and which cannot be ignored—they are social facts, growing out of the conditions of our social life, and whose bearing and significance must be reckoned with in any intelligent study of this problem. As I have elsewhere said, "It is not simply a problem of preventive medicine with which we have to deal, but in its broader aspects a social problem complicated with all the vast interests of our social life. If these complicating factors render the work more difficult they give to the results a higher and larger value. "The value of this work is not to be measured alone by material results in diminishing the sum of venereal morbidity and mortality. If carried to a successful issue it will represent an improvement in the moral as well as the physical health of the people. The education of young men in sexual hygiene, and the inculcation of clean living as the surest basis of health and character, tends to make of them not only healthier men, but safer husbands, sounder fathers and better citizens."

Before entering into the discussion of this subject, I may be permitted to express my great gratification that representatives of the New Jersey State Conference of Charities and the Board of Education have met together with members of the medical profession for the study of a problem of social hygiene of such great moment to humanity. This composite gathering illustrates the unity of interest and effort between physicians and laymen at the present day in all matters relating to the promotion of the social welfare. The time has passed when the cure of disease is considered the chief object or end of medical science, or when the prevention of disease is regarded as the peculiar and exclusive province of the medical profession. This has come from the recognition of the fact that the conflict with disease is not simply a question of dealing with microbes, but chiefly the correction of the ignorance and bad social conditions which favor their spread; further, that the extermination of diseases communicated in the ordinary relations of social life cannot be accomplished without the enlightenment of the public and the helpful aid of social workers whose activities bring them in contact with the actual living conditions of the people.

*Read by invitation before a joint meeting of the New Jersey State Conference of Charities, the Board of Education and the Mercer County Medical Society.

Another hopeful sign of the times is the broadening of the spirit and practice of the medical profession in sharing its knowledge with the public. The temple of hygienic knowledge is no longer jealously guarded and surrounded with mystery and secrecy. The genius of modern medicine is essentially in the direction of the popularization of hygienic knowledge, not in Delphic utterances or musty formulae, but in language intelligible to the people.

The spread of this knowledge imposes upon the public a responsibility which knowledge always carries with it. We no longer regard infectious disease as a manifestation of the blind workings of forces of nature, but the effect of causes which may be apprehended and controlled. We recognize that most diseases are of germ origin and are propagated by human agency, and that the chief elements in this agency are ignorance, flagrant carelessness and the reckless disregard of hygienic laws. Especially is this true of the class of infections we are now considering, which are commonly communicated through the voluntary acts of individuals. The responsibility for their spread is narrowed down to a question of individual accountability, and their prevention is largely a matter of personal hygiene—of individual prophylaxis.

The present may be classed as the era of preventive medicine. Within recent years sanitary science has shown a marked aggressiveness in attacking many infectious diseases which had hitherto defied control. Its signal success in controlling typhoid fever, smallpox, diphtheria, etc.; in stamping out the bubonic plague wherever it has shown its head upon this continent, and its most brilliant achievements in combating the great white plague gives warrant to the optimistic view proclaimed by Pasteur that "it lies within the power of man to rid himself of every parasitic disease." With the opening of the 20th century the watchword of Sanitary Science is the extermination of every contagious disease.

This optimistic note has not, however, been sounded so clearly and confidently in relation to the class of diseases which has been aptly designated as the "Great Black Plague." Before this social pestilence which, originating in the under world of humanity, sends its ramifications through every rank and order of society, the sanitary forces pause irresolute, baffled and beaten back. They see no clear way by which this social scourge, entrenched in the stronghold of privacy, and wearing the defensive armor of shame and secrecy can be reached by sanitary repression. It may be fairly stated that if the attitude of the sanitary officials is one of inaction, the attitude of the public is that of indifferentism.

This apathetic attitude of the public is largely due to the fallacious idea that these diseases are confined to those who voluntarily expose themselves in licentious relations, and the no less fallacious idea that they are merited punishments for the sin of immorality—at the bottom of it all a social sentiment, compounded of ignorance, prudery and false modesty which resolutely tabooes all knowledge relating to sex and its diseases.

In order to clear away these and other misconceptions that may exist in the minds of the lay mem-

bers of my audience, and to emphasize the pressing importance of this preventive problem, I may be permitted to make brief refence to a single phase of this evil, viz., its menace to that most fundamentally important of all human institutions, the family:

The significance of social diseases as a peril to the family comes from the fact that they specifically affect the system of generation, sterilizing the procreative capacity, or so devitalizing the primordial cells that the product of conception is blighted in its development, and the office of maternity desecrated by the bringing forth of tainted, diseased or dead children.

At first glance it may appear somewhat incongruous to associate a class of infections which, in popular estimation always bear the stamp of immorality with a social institution which typifies our highest conception of virtue. Unfortunately, marriage does not always prove that "asylum, pure and chaste," into which diseases of vice find no port of entry. On the contrary, thousands of pure young women find in this relation, legitimatized by the State and sanctioned by the Church as honorable and virtuous, not a safeguard against these infections, but a snare for their entrapment. The explanation is not far to seek. A large proportion of men contract these diseases either before or after marriage, and carry the infection into the family. The conditions of married life render the wife a helpless and innocent victim.

The only plea that can be urged in extenuation of these crimes against pure women is that the men who commit them are, for the most part, ignorant that they are bearers of contagion, and especially ignorant of the terrible consequences to their wives and children. For, it is to be understood, these infections are markedly accentuated in virulence and danger to the wife and mother in fulfilling the functions for which marriage was instituted.

The frequency of marital contamination does not admit of exact mathematical expression. The amount of venereal infection in marriage is an unknown and unknowable quantity. Few of the innocent victims know or even suspect the name or nature of the disease which transforms them from healthy women into suffering invalids. The social sentiment which ignores the existence of these infections, and professional ethics, which draws around them the sacred circle of the medical secret, unite in protecting them from exposure.

Since the discovery of the causal agents of these diseases, statistics bearing upon this point have the value of scientific accuracy. The specific germ may be identified in the inflammatory lesions it occasions.

The report of "the Committee of Seven" appointed by the Medical Society of the County of New York in 1901, showed that about 30 per cent. of the cases of venereal diseases in women treated in private practice in that city were infected in marriage.

The report of the Committee on Sanitary and Moral Prophylaxis, appointed by the Maryland State Medical Society in 1907, showed that nearly 40 per cent. of the cases of gonococcus infection in women treated in private practice in Baltimore were contaminated in marriage. Fournier's statistics of over 10,000 cases of syphilis, including women from every walk in life, showed that 20 per cent., or one in every five syphilitic women, received the infection from her husband.

The President of the Gynecological Society, at the meeting of the Congress of American Physicians and Surgeons in Washington, in 1907, stated that about 70 per cent. of all the work done by specialists in diseases of women in this country was the result of gonococcus infection. Brief reference may now be made to the specific effects of these diseases upon the family:

1. *Dangers to the Wife.*

We are indebted to gynecologists for our knowledge of the specific dangers to the wife and mother from gonococcus infection. To present the more salient of these facts in concrete form: 80 per cent. of all deaths due to inflammatory diseases peculiar to women, practically all purulent inflammations of the tubes, and ovaries, and 75 per cent. of all special surgical operations performed upon women are the result of gonoccoccus infection. This does not take into account the large number of infected women who are not operated upon, but drag out a miserable existence of semi or complete invalidism.

One of the most common and characteristic results of this infection in woman is sterility; 50 per cent. of these infected women are rendered absolutely and irremedially sterile, while a much larger proportion are sterile after the birth of the first child; so that one child represents the total fecundity of the family. A large proportion of sterile marriages, contrary to the popular view, is from incapacity and not of choice.

The dangers of syphilis to the wife are too numerous and varied to admit of detailed mention. Her personal risks from the disease are all the more serious as her health and resisting capacity are impaired by the bearing of dead or diseased children.

2. *Dangers to the Offspring.*

While gonococcus infection is not susceptible of hereditary transmission, it often carries with it infective risks to the offspring. Practically all of the ophthalmia which blinds babies is due to this cause—besides other serious dangers, such as vulvo-vaginitis and arthritis.

Syphilis is the only disease transmitted to the offspring in full virulence—killing them outright or so vitiating the processes of nutrition that they come into the world with the mark of death upon them, or if they survive, they are condemned to carry through life the stigmata of degeneration and disease. Moreover, they are capable of transmitting the same class of organic defects to the third generation. Syphilis thus represents the most potent factor in the degeneration of the race. From 60 to 80 per cent. of syphilitic children die before being born, or shortly after birth; only one in four or five finally survives. In some cases the mortality is 100 per cent., absolutely extinguishing the posterity of certain families. And here I may allude to the view which looks upon the destruction of these physical weaklings as nature's process for the elimination of the unfit. There is no worse sophistry than to attribute to nature what is clearly due to man's crim-

inal ignorance. But for the fact of the syphilis of the parents these children might have been born in conditions of vitality and physical vigor.

3. *The Personal Risks of the Husband from His Disease.*

Sterility in the male is not an infrequent result of this infection. The proportion of unpremeditated sterile marriages directly due to the husband's incapacity from this cause is variously estimated at from 17 to 25 per cent., and as he is also responsible for the sterility of his wife, about 75 per cent. of sterility from this cause in married life may be traced to the fault of the husband. Lier Ascher's careful statistics place this proportion at 71.2 per cent.

Another danger to the family comes from the incapacitating effect of syphilis upon the husband in his character as head and support of the family. The dangers of syphilis to the individual are measured by its remote rather than by its immediate effects. The dreaded manifestations of the disease—the implication of organs essential to life, especially affections of the central nervous system, may not develop until 5, 10, or 15,—or even 20 years later. So, it often happens that long after the follies of youth have been forgotten, and the man has become a husband and a father, he must pay the penalty for his misdeeds in locomotor-ataxia, tumor of the brain, paralysis, blindness or other affections which, for the most part are incurable, and entirely incapacitate him as the bread-winner of the family. The amount of domestic misery and unhappiness, separations and divorces that lie behind these ugly facts cannot be here considered.

From this cursory survey of the subject it is evident that social diseases have most important relations with the family. They are directly antagonistic to all that the family stands for as a social institution—they are destructive to its health, its productivity and its social efficiency. They occasion an enormous sacrifice of potential wealth from the loss of citizens to the State. Moreover, they distill a double venom; they poison not only the health, but the peace, honor and happiness of the family.

Probably the dominant feeling excited among the lay members of my audience by these disclosures is one of surprise that these abuses against the innocent and helpless members of society should be possible, and the great body of humane people in this country remain indifferent to their significance, ignorant of their existence even. Ignorance is the cause, and at the same time the explanation of the indifference. Men carry these infections into the family because they do not know. Women suffer ill-health, sterility and mutilation of their bodies because they do not know. Society is insensible to their sufferings because it does not know; the saving hope of the situation lies in letting people know. Publicity of these evils—education of the public to their significance are the prime indications.

The importance of this enlightenment is emphasized by the fact that this danger to the family and society has always been covered up and concealed. This social pestilence has been for centuries installed in our midst—poisoning the sources of life, sapping the foundations of our national vitality and vigor, ravaging the home and family—while society, behind "its seven-folded veil of prudery and false modesty" refuses to recognize its existence.

John Stuart Mill declared that "The diseases of society can no more be checked or healed than those of the body without publicly speaking of them." But social sentiment has decreed that the "holy silence" upon everything relating to sex and its diseases must not be broken.

It was recognized by those who inaugurated the movement for Sanitary and Moral Prophylaxis in this country that it was time to break with this policy of silence and concealment, and organize a social defense against a class of diseases which are most injurious to the highest interests of human society.

In surveying the field of work opening up before this society the most pressing indications seem to be: 1. To enlighten the public to the extent of these diseases and their danger to the public health. 2. To expose the social dangers of these diseases, especially to the innocent members of society which come from their introduction into marriage. 3. To educate young people in a knowledge of the fundamental facts of life and sex, the physiology and hygiene of the reproductive function, and the dangers which come from its unnatural or irregular exercise.

In addition to the educational program, this scheme of prophylaxis included the purely medical measures of enlarged facilities and more adequate provisions for the treatment of this class of diseases with the view of preventing their spread by prompt sterilization of the sources of contagion.

Since these infections may be traced to their original source in the "Social Evil," another essential feature of this prophylactic scheme was the study and prevention of the causes of prostitution with the object not to make prostitution safe, but to prevent the making of prostitutes. The various elements which enter as factors of prostitution cannot be considered within the limits of this paper, but the conclusion seems to be justified by careful study of the causes that while ignorance, the lack of moral training, the economic dependence of woman, and the conditions of our social life contribute to the making of prostitutes, the most essential cause is the unbridled instinct of man which impels him to sensuality. In other words, the supply of prostitutes is created by the demand. The solution of this problem of social hygiene will be found in the promotion of masculine morality.

I have been asked to speak more particularly of the educational features of this program. The general dissemination of knowledge respecting the extent of these diseases and their dangers to the individual and to society is designed not only to impress the public with the need of this prophylactic work, but to create a sentiment in favor of a radical change in our present educational system which now ignores the sexual organization of the individual.

The education of young people in the laws and hygiene of sex contemplates an innovation upon our established system of education—both parental and scholastic; it runs counter to deep-rooted prejudices which are the result of generations of heredity and

training; it means a complete reversal of the social sentiment which condemns such knowledge as unfit and improper.

It is but a truism to say that the object of education is to fit the individual for the practical duties of life. Formerly the training of the intellect—the mental development of the individual was the chief object of education. The trend of our modern educational system is essentially in the direction of the training of the body as well as the mind. This has come from a recognition of the fact that the hygiene of the body is no less important, or rather, it is a condition of the development of the highest mental efficiency and capacity. Educators agree that the knowledge of physiological laws relating to the preservation of health is of the highest importance, but in-so-far as this knowledge relates to the reproductive function, it is not considered a desideratum—and yet they must know that this function is bound to be a factor—and a most important factor in the life of the individual. The care of other functions of the body—what one eats or drinks—affects only the individual, but the care of the reproductive function affects not only the individual, but society and the race.

So far as the interests of the individual are concerned. the right use of this function is the surest basis of health, character and usefulness in life; its wrong use often results in his physical and moral wreckage.

From the social standpoint its relations are of supreme importance. The three most essential elements or factors in our civilization, the family, the monogamous relation and marriage fidelity—upon which depend the productivity and the morality of the race—are bound up with the proper exercise of the sex function.

In relation to posterity it is evident that since it is to this function that the life of the human race is entrusted, it is the highest duty of the individual to transmit, unimpaired, his organic vigor to the children in whom he perpetuates himself. The physical progress of the race demands that the springs of heredity be kept pure and undefiled. If the sources of life are poisoned by foul infections there is engendered a vast mass of misery and disease in the descendants. "The greatest criminal is he that poisons the germ cells."

Another motive to this education is that the sex function is, of all functions of the body, the most prone to sensual indulgence, and most requires education and training in the control which reason and moral sense impose upon instinct. Physical morality is largely a problem of self-control. The mastery of the mind over the body can best be effected through an understanding of the bodily conditions and their relations to the physical health and well-being.

This education is designed, first of all, to create a right mental attitude toward the appetites and passions, and a right conception of sex relationship—to build up high ideals in young men based upon the physical and moral benefits of clean living; upon respect for their own bodies, and respect for the virtue and personality of woman. It is also designed through sound instruction in the physiology and hygiene of sex to correct the false physiological ideas upon which the so-called "Sexual necessity for men" and the double standard of morality are based.

It is not claimed that knowledge of the laws of sex will alone prove a safe and sufficient chart for the regulation of the sexual life of the individual; this hygienic teaching should be supplemented and reinforced by teaching of a higher order, which comes more properly within the province of the religious teacher, and which inculcates a sense of moral responsibility in intersexual relations. I believe that the clergy would find in this field an opportunity for doing their best and most transforming work, but it must be confessed that with a few notable exceptions, the attitude of the clergy is characterized by a religious avoidance of the subject.

We may now inquire what is the attitude of parents in regard to the instruction of young people in the hygiene of sex? It must be admitted that the spirit and practice of most parents is expressed in the traditional policy of silence and suppression.

Many parents are silent because "they fear to soil the crystal purity of the youthful mind" with a thought or suggestion of anything so shameful as sex. If ignorance were a preservative of innocence, if their silence shielded youth from sexual errors it might be justified, but there is nothing more fatuistic than the belief that they succeed. Teachers testify that even at the early age at which children enter school the little "innocents" are not ignorant of sex knowledge which is often of a depraved character, and that the results of the parental policy are manifest in unclean conversation and other evidences of defilement of mind—not infrequently in bad habits.

The objection urged by some that sex education would stimulate an unhealthy curiosity and focus the imagination upon sexual matters is scarcely more valid—curiosity about the origin of life and sex already exists—it is implanted by nature. If it is not satisfied from pure sources it will be fed from impure and tainted sources; it must be the education of the home or that of the streets; there is no alternative.

The conclusion of the matter is this: It is not a question whether the youth shall learn something of sex and self, rather is it a question whether it shall be scientific truth or dangerous error—whether this instruction shall be sound sanative, wholesome and moralizing in its influence, or whether it shall be false, unhygienic and demoralizing in its tendencies.

What is the attitude of educators towards sex instruction in schools? It must be confessed that there exists in the ranks of teachers the same sketpicism as to the propriety of this instruction. Even among those who have given the subject thoughtful attention there is doubt as to the wisdom or expediency of introducing it in the public schools.

Others still who are familiar with the facts which furnish motives to this instruction see no real alternative. They believe not only in its importance, but in its entire practicability and look upon it as an opportunity, especially for the teachers of biology and botany to do their best and most useful work.

It is worthy of note that at the Manheim Conference of 1907, held under the auspices of the "German Society for the Prevention of Venereal Diseases," and in which the most distinguished educators of the United Kingdom participated, the three days' session

was exclusively devoted to the discussion of "Sex Pedagogy." There was not one dissentient voice among those present that sex should be taught in the later years of secondary boys' schools, and the only grave differences of opinion were as to what should be taught, how, and by whom—whether certain instruction should be given some years earlier, and also as to whether girls should be taught. The general conviction voiced by one speaker was that "the benefit arising from the unrestricted scientific explanation of the sexual problem, even in wide circles is so enormously great that all objections thereto must disappear."

It is also worthy of note that in certain countries of Europe the teaching of sexual physiology and hygiene in the higher grades of schools has been made mandatory by the Ministers of Public Instruction.

Whatever doubt may exist in the minds of educators as to the wisdom or practicability of introducing sex instruction in the public schools, the teaching of the physiology and hygiene of sex in the high schools and colleges would seem to be imperative. During the adolescent period when the ferment of sex begins to work in the being, it is of the utmost importance that the young man should know the meaning and proper use of this physical endowment, the significance of sex phenomena, their relation to his physical health and well-being, and of the necessity of the guidance and control of this physiologic impulse.

At this critical period he stands at the parting of the ways—on the one hand the steep and difficult path of continence; on the other, the broad inviting road of incontinence, which is full of pitfalls and hidden dangers. Through the complicity of silence on the part of parents, instructors and all the educational agencies of our social life, he is not taught the advantages of continence, nor warned of the right horrible dangers of incontinence. He is left to stumble in ignorance and learn by bitter experience. The physical dangers which are inseparable from licentious relations should be fully pointed out, as well as the imminence of these dangers; farther, that safety cannot be compassed by protectives or circumspection in choice. If no higher motive, an intelligent selfishness, a wholesome fear of infection may restrain him when moral considerations would not avail.

At the present day all indications point to a growing sentiment in favor of sex education on the part of both parents and teachers. The perceptions of many parents have been awakened to a sense of their obvious duty in this regard, but the general feeling is one of inability to do this wisely and well. On the part of educators there is also what may be termed "an unpreparedness" for this work. When our society endeavored to secure the introduction of the teaching of sexual physiology and hygiene in the higher grades of the public schools of New York we were met by the statement that even granting the desirability of such instruction, that the teachers, most of them young and unmarried women, were not qualified either by knowledge or experience to give it.

Our society has endeavored to meet this want on the part of parents by lectures before mothers' meetings and other groups of women—in which the subject matter and methods of sex instruction are given, and by lectures before segregated groups of young people to repair as far as possible the results of the parental policy of silence and neglect. Three educational pamphlets have been issued. "The Young Man's Problem," the "Boy Problem," also a pamphlet for Teachers. In the "Boy Problem," intended for parents and teachers, the question of the nature and scope of this instruction, at what age and by whom it should be given, as well as particular methods are considered.

I hasten to add that I believe that this work falls within the province of the pedagogue rather than the physician. It is the office of the physician to supply the requisite scientific knowledge and impress its importance, but the teacher is better fitted through experience and opportunity to adapt this knowledge to the age, mentality and the special requirements of individuals or particular groups. The responsibility for giving this instruction should be placed upon the shoulders of parents and teachers, where it fairly belongs.

It will be granted that instruction relating to sexual diseases, their pathological significance, modes of contagion and their consequences to the individual and others would come with more weight from a physician whose competence and authority in all matters relating to disease would be unquestioned. Physicians can also render most invaluable aid by instructing the young men of their clientele in a knowledge of the fact that continence is not harmful, but compatible with the highest physical and mental vigor, and that the doctrine of the so-called "sexual necessity" for men which has always been invoked in support of a double standard of morals for men and women has no basis in the teachings of science.

In exposing the dangers of social diseases to the family, the significant fact appears that men are the authors of these social crimes, women the victims. There is no other possible explanation of their exclusive masculine etiology than the standard of morals women weakly tolerate in the men they marry. For the correction of the ethical heresy that one-half of humanity has imperious duties which the other half may repudiate or disclaim, we must look to the educational and moral training of the rising generation.

In this connection it may be said that the present system or rather deficiency of home education tends to foster and perpetuate this unilateral code. The daughter is brought up with the idea that her destiny in life is marriage and children. She is taught that the love of one man should fill the entire life of a woman; that chastity is her most precious possession, and that a single lapse from virtue would bring dishonor to her family and carry with it her own social ruin. In addition, she is carefully guarded from evil associations.

No such ideals are inculcated in the son. He is not taught that he should conserve his chastity for the woman who will one day be his wife and the mother of his children. He soon learns that the "sowing of wild oats" is a pardonable pastime—a natural and to be expected incident in the life of a young man; even a hygienic procedure; that it entails no consequences and carries with it no social stigma.

Now, chastity does not reside altogether in the organization of the woman; man is not impelled to sen-

suality by the force of a distinct and altogether special physiological endowment. It is the fixed ideas which have been trained in him that form sexual character and determine sexual conduct. From a purely physiological standpoint there is no more necessity for a young man to sow his wild oats than for his sister to do the same.

When women appreciate the fact that the foundations of sexual character are laid in early youth; that the ideas and principles instilled at this period are apt to dominate the mental attitude toward sex and sex relations throughout life, mothers will undertake the sex education of their sons, teaching them not only the fundamental facts of life and sex, but also that the principles of morality apply to the sex conduct of men and women alike. Mothers will teach their daughters that marriage is not all romance and sentiment; that dissipated men make unsafe husbands, and that the halo of romantic interest thrown around the man with a profligate past by fiction writers, is a symbol of shame—a signal of danger for his future wife and children.

Finally, I may say that it is eminently fitting that women should actively interest themselves in the solution of this problem or social hygiene. Every question affecting the relations of the sexes is a woman's question as much as it is a man's question. In any reform affecting the family the aid and co-operation of woman are essential. The chief impelling motive to the inauguration of this prophylactic movement was the fact that the burden of shame and suffering, disease and death, falls most heavily upon the innocent members of society. But the curse of social diseases will never be lifted from the family so long as our conventional code considers masculine morality a negligible factor.

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CARBOHYDRATE INDIGESTION.

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THE consideration of a functional disturbance, whether depending upon or complicated by an organic disease or not, should rest upon a definite physiologic basis.

The average individual, on an ordinary diet, requires from 250 to 500 grams of carbohydrates daily, according to the amount of proteid and fat ingested. (See table, page 19, writer's "Golden Rules of Dietetics.") Under conditions of hard labor and exposure to cold, about double the ordinary requirement of calories is needed and as there is no special indication for increasing either proteids or fats and as contraindications exist to increasing materially either of the latter, the capacity of the body to digest carbohydrates should rise from 500 grams to 1,000 grams, as the heart and skeletal muscles develop.

The digestion of carbohydrates, therefore, has wider as well as absolutely greater limits and this fact is in causal relation with the relatively greater perfection of carbohydrate digestion and the less toxicity of either the inevitable or the adventitious products of carbohydrate metabolism.

The principal carbohydrates assimilable by the body are starches, dextrins, single and double hexoses. Under theoretically normal conditions, all are ultimately changed by primary or by what may be termed secondary digestion, into dextrose—glucose—before they are utilized. Their utilization consists in oxidation into carbon dioxid and water in the blood or tissues, apparently without the formation of more than traces of intermediate products, although an excess may be transposed into fat. Not to mention the indigestible carbohydrate, cellulose, nor the rarer carbohydrates, this class of foods presents a marked contrast to fats and a less marked contrast to proteids, in that, once ingested, it does not normally escape from the alimentary canal except in the merest traces, unless an enormous excess is taken or unless it is inclosed in seed coats—as peas, beans, etc.—or in dense masses of vegetable connective tissue — as onions, carrots, etc.—which the digestive juices could not be expected to penetrate.

However, not all of the carbohydrate ingested is digested, for the bacteria and other micro-organisms of the alimentary canal always destroy a part.

As for proteids, the body provides two ferments for starches—and dextrins—ptyalin of the saliva and amylopsin of the pancreas. The former acts only on cooked starch (and dextrin), while the latter, being stronger or more concentrated, is able to dissolve the cellulose investing starch granules not already ruptured by heat. If starchy food is thoroughly comminuted and insalivated, it may be almost perfectly digested by the saliva provided that the process is not inhibited by the acid gastric juice, as in the Fletcher method of eating, in cases of hypochlorhydria or when the thoroughly masticated food is placed in an incubator. Under ordinary habits of eating, salivary digestion amounts to very little, nor is it necessary, as the pancreatic amylopsin is abundantly able to take care of all the starchy food ingested, cooked or raw, barring gross excess.

Whether by ptyalin or amylopsin, starches are digested through the various dextrin stages into a double-hexose, maltose, which consists potentially of two molecules of dextrose. Two other double hexoses are contained in the diet: saccharose, the sugar of the cane, maple and beet; and lactose, which forms about 4 per cent. of milk. Saccharose consists potentially of a molecule each of dextrose and laevulose; lactose of dextrose and galactose; dextrose, laevulose and galactose being single hexoses. The splitting of the double into the single hexoses is due to invertive ferments—or *a* ferment—secreted both by the stomach and the intestine.

Dextrose and laevulose are contained as such in many fruits. The simple hexoses, whether ingested directly, or produced by one or two digestive steps, are apparently absorbed as such. Probably the double hexoses, being soluble, are absorbed to some extent unchanged. The sugars, however formed, are absorbed mainly by the portal tributaries, pass to the liver and are converted into glycogen, up to the capacity of the liver, which is less for laevulose and galactose than for dextrose. Thus an excess of any form of sugar passes directly into the general blood stream and causes a glycosuria. When glycogen is reconverted into sugar, it apparently is always dextrose, whatever the original source.

Glucose, therefore, may be considered a predigested food, cane and other sugars, partly digested foods. They

are objectionable only by being irritant in too strong solution, in tending to superalimentation and in relieving the body of its normal tasks. The appetite for starchy and for saccharine foods is reciprocal and varies in different individuals, not merely as an expression of a sweet taste, but as an index of physiologic ability. Under present conditions, the average person takes over 100 grams of cane sugar a day and many as much as 200 grams, without harm.

Raw starch is ingested mainly as bananas, though certain persons eat large quantities of raw chestnuts and other starchy nuts and a few eat raw sweet potato—which, by the way, tastes almost exactly like chestnuts and is much cheaper—radishes, etc., so as to introduce considerable raw starch.

Obviously, there is always a literal gastric starch indigestion when raw starch is eaten and also, to a less degree, with a normal secretion of hydrochloric acid, or a fortiori, in hyperchlorhydria.

In the strict physiologic sense, it is questionable whether starch or carbohydrate indigestion exists. The writer has never been able to find a saliva that would not convert starch into maltose nor has he ever seen a case in which a specific failure of amylopsin or invertin without failure of other ferments, could be demonstrated. If any case of starch of sugar digesting failure exists, without general failure of digestive ferments, he is ignorant of it.

From the clinical standpoint, so-called amylaceous or, more generally, carbohydrate indigestion may be subdivided as follows:

1. Over-ingestion of carbohydrates. If peas, beans, etc., are swallowed whole, or if coarse vegetables, especially if uncooked, are swallowed in large masses, the digestive juices obviously cannot enter. Not only, therefore, is there a waste of the contained starch—as well as proteid, etc.—but the resulting diarrhoea hurries the food through the alimentary canal so that digestion generally is incomplete.

Even if well comminuted, enormous masses of potato, bread, etc., will undoubtedly yield free starch when passed by the bowel.

Owing to their solubility and consequent absorbability, it is only in the most extreme cases that sugars will pass the alimentary canal unchanged. If a sugar other than dextrose occurs in the urine, we can, of course, be reasonably sure that there has been a failure of digestion and we even know the normal limits of digestibility, or, at least, of digestibility and proper performance of the glycogenic function.

The treatment of this group of cases is obviously dietetic.

2. Raw starches. In the majority of cases, bananas do no harm. Indeed, they may sometimes be used in considerable quantity. Other forms of raw starch are likely to produce unpleasant symptoms, but mainly because they involve the ingestion of rather hard particles which are likely to cause pyloric spasm and retention of chyme and subsequently irritative diarrhoea.

3. Hyperchlorhydria. In this condition, there is an exaggeration of the normal inhibition of salivary digestion so that what little sugar is formed by ptyalin, is absorbed within an hour after a meal—the usual limit of evacuation for diagnostic purposes—and the chyme contains starch and erythrodextrin in solution. However, no harm results and, indeed, there is a plain indication to administer carbohydrates, and especially sugar, to check the tendency toward acid formation.

There is a prevalent opinion that what is ordinarily meant by starch indigestion—that is to say, fermentation of carbohydrates by micro-organisms, very frequently occurs in spite of the antiseptic action of hydrochloric acid. While not claiming impossible antiseptic power for weak solutions of hydrochloric acid—and 4:1000 is about the strongest solution possible, even in hyperchlorhydria—the writer is convinced that an uncomplicated case of persistent hyperchlorhydria is incompatible with any marked degree of fermentation. Of course, if beer or fermenting food is swallowed, or if fermentative germs are introduced from carious teeth, tonsillar crypts or from a mouth into which candy, etc., is frequently introduced, or if marked stagnation of gastric contents is present, there may be carbohydrate fermentation even if the hydrochloric acidity is high.

The opinion that hyperchlorhydria and carbohydrate fermentation are frequently associated is, in the writer's opinion, due to two diagnostic fallacies: 1. The upper limit of free HCl in chyme is placed too low, even under 25 degrees. 2. In measuring the acidity by titration, the reading is taken for free HCl not at the proper point of the change of tint from cherry to orange, but ten or fifteen degrees too high, at the point of complete decolorization. By combining these two errors, many cases of hypochlorhydria are interpreted as hyperchlorhydria, not only accounting for the supposed coincidence of hyperchlorhydria with fermentation, but for the surprising prevalence of the former condition is the practice of some physicians. Then, too, the diagnosis is often reached by guesswork from symptoms. After sixteen years' experience in strictly digestive practice, the writer finds that the cases that give the most typic histories of pain after eating, etc., are usually not hyperchloric, although such a history is really typic of cases that do present an excess of hydrochloric acid.

The question naturally arises whether the excess of hydrochloric acid, passing into the duodenum, does not interfere with amylopsin digestion also, or with the inversion of double hexoses, or whether some other secondary condition of the intestine does not affect the digestion of carbohydrates. So far as the writer's observation goes, these cases do not present much alimentary fermentation, which is the real condition in most cases called starch indigestion, but they are usually rather lean, though scarcely emaciated or weak, and it is possible that there really is some true failure of carbohydrate digestion. However, if one makes the diagnosis by chemic analysis instead of by guess, and applies perfectly obvious dietetic and alkaline treatment, hyperchlorhydria is an absolutely and promptly controlable condition, though relapses are prone to occur.

4. Fermentation by bacteria and yeasts. In nine cases out of ten, designated as amylaceous or carbohydrate indigestion, there is no trouble with the ferments concerned, but the carbohydrate food is attacked simultaneously by organized ferments. Without attempting to draw fine lines, organic acids seem to be produced rather by bacteria, carbon dioxid by yeasts, but probably neither bacteria nor yeasts exist to the exclusion of the other, and, if they did, both organic acids and carbon dioxid would be produced. The fermentation may be pretty definitely limited to the stomach or to the intestine, or both may be involved. Usually, carbo-

hydrate fermentation does not coexist with putrefaction of proteids and rancidity of fats, which two latter are often coexistent. The odor of the gas belched up from the stomach or passed by the bowel may, alone, enable a distinction to be made. Again, with proteid putrefaction, indican is almost always found in the urine, in excess and this simple test may also enable a differential diagnosis to be made. Of course, it is not claimed that the one decomposition prevents the other absolutely; indeed, normally, there is always slight micro-organic decomposition of all three kinds of organic foods (proteid, carbohydrates and fats). But the genuine antagonism between proteid and fat splitting germs on the one hand and carbohydrate splitting germs on the other, is the basis for the therapeutic use of buttermilk and lactic acid cultures. Unfortunately, at present, these are often used indiscriminately.

It is a paradox that while true but harmless carbohydrate indigestion necessarily accompanies hyperchlorhydria—and to a less degree euchlorhydria—the fermentation that is usually designated amylaceous in digestion, occurs almost entirely in hypochlorhydria, at least so far as the stomach is concerned. But, two important qualifications are necessary: 1. For some reason, which is a puzzle to the writer, a good many quite persistent cases of hypochlorhydria do not develop gastric fermentation. Hypochlorhydria is quite apt to be marked by pyloric relaxation, so that the food slips through rapidly into the intestine and this fact explains some of these cases, but even when the stomach retains its food for a normal time, fermentation does not necessarily develop. 2. The writer has never been able to verify any of the theoretic rules as to the effect of differences of gastric acidity on the intestine. They are plausible enough, but, like the rules in German grammar, there are exceptions almost as numerous as the cases that conform to the rules, and there are exceptions to the exceptions. Thus, even in chronic achylia gastrica, intestinal digestion may proceed normally and a persistently sour and gassy stomach may coexist with a well behaved intestine.

One of the most marked cases of intestinal fermentation—a term which should be sharply distinguished from putrefaction—that the writer has seen, occurred in a physician's wife. On account of a suspicion of animal parasites, especially amoebae, the faeces were brought fresh and warm for examination. On removing the cover, they foamed over the top of the can like beer and for the same reason, the presence of carbon dioxid due to yeasts. No animal parasites were found.

From what has preceded, it is evident that there is very little use in treating so-called carbohydrate indigestion by diastase, malt, etc., although if ptyalin should be found absent—and the writer is anxious to encounter such a case—diastase would be indicated and in general pancreatic failure, the various ferments are indicated. However, in many instances, the use of artificially added starch digestants seems to deprive the bacteria and yeasts of their opportunity and possibly inhibits their action or even has a direct antiseptic action. An analogy may be drawn to the use of pepsin in hypochlorhydria, without essential failure of the secretion of pepsin, or, at least, of propepsin. In these cases, while the use of pepsin is not theoretically indicated, it does seem that its administration in considerable dose hastens peptic digestion in spite of the deficiency of acid.

In general, however, the writer would limit the use of starch digesting ferments to cases without special evidence of fermentation or of essential lack of bodily ferments, but when the state of weakness and emaciation indicates the reinforcement of the digestive power and the increase of the diet to a point beyond the capacity of the digestive organs without such artificial aid. In such cases, the preference should be given to the papaw derivatives, which act in any medium, acid or alkaline, and which seem to be more powerful than ordinary diastase, malt and pancreatic extracts.

Alimentary asepsis and antisepsis are indicated whenever fermentation is present. All food should be given freshly cooked; that is, sterilized by heat. Beer, koumyss, even certain kinds of malt, butter-milk, unwashed raw, vegetables, are especially contraindicated. As already stated, the mouth and throat and even the nose, are important portals for the entry of germs. Frequently, the dentist, often the laryngologist, must be called to assist in removing niduses of infection. The teeth and mouth generally should be thoroughly cleansed both before and after meals. Good, white toilet or bath soap is superior to aromatic, supposedly antiseptic mouth washes and the dorsum of the tongue should be thoroughly brushed as well as the teeth. Waxed fine shoe thread should be employed to remove debris from between the teeth.

Gastric and colonic lavage and purgation, using calomel by preference, are more efficient than attempts at local alimentary antisepsis. Still, the maintenance of a normal proportion of hydrochloric acid is of distinct value and the writer even reposes some confidence in salicylic acid compounds, preferably salacetol, as well as menthol, etc. Benzoic acid compounds seem to be less efficient. Acetozone also acts well, but is irritating and by no means so efficient as has been claimed. Charcoal, given dry in doses of a coffeespoonful or more fixes the gases and certain toxic substances, the latter, however, not derived from carbohydrates. Small amounts in moist tablets, are useless. Soda, aromatic spirits of ammonia, etc., "sweeten" the stomach by neutralizing organic acids, but, obviously, also neutralize hydrochloric acid and check digestion. Hence, they should not be used as a routine.

A very important point is to starve out the carbohydrate-attacking germs by reducing carbohydrates to a minimum. A diet of meat, eggs and milk for a few days, introduces only a small amount of carbohydrate, in the form of lactose, and a mere trace of glycogen, which do not ferment readily. While, obviously, the diet should not exceed the needs of the body, the attempt to reduce carbohydrates permanently, weakens the patient and, so long as any starch and ordinary sugars are given, fermentation will persist, unless other measures are successful. Hence the idea of reducing the starchy and saccharine foods to the capacity of the body is fallacious. The proper dietetic treatment consists in an immediate, practically complete, withdrawal of carbohydrates, so as to remove the pabulum of the germs concerned and to allow other bacteria to gain the ascendency and then to return to a full but not excessive carbohydrate diet. It should not be forgotten that however disagreeable the results of carbohydrate fermentation, neither the bacterial nor the metabolic products of carbohydrates have anything like the toxicity of those of proteids and fats.

A few words should be devoted to the matter of organic disease, for we are growing more and more suspicious of the essential functional nature of any disease. So far as ptyalin is concerned, Ewald and Schlesinger have tried to find salivary indigestion in cases of dental caries, mumps, cancer of the mouth, etc., but in vain. This has also been the present writer's experience, though the search was not so thorough.

Diabetes is not apparently connected with carbohydrate indigestion; indeed, if it were, the prominent symptom, glycosuria, would not occur. It has been advised to establish carbohydrate indigestion, or rather fermentation, by administering yeast, so as to allow diabetics to eat starchy foods. Of course it is equally rational to let them eat and then make them vomit. There is no sense in giving food with a string attached to it.

Organic pancreatic disease affecting the parts tributary to the duct, like organic disease of any other organ, may or may not interfere with function. Shock, asthma, Addison's disease, and other conditions inhibiting innervation probably often cause pancreatic achylia. So far as the writer knows, in none of these organic or functional interferences with pancreatic activity, is amylopsin alone affected. As to invertin secretion, we have no practical knowledge.

Obviously, alimentary fermentation is especially apt to occur when there is catarrhal inflammation, ulceration, etc., which affords a nidus for germs, or dilatation, ptosis, or nearly any other organic or functional condition that interferes with mortality. Indeed, except transiently, as the result of introduction of fermentative germs in large quantity, it is questionable whether a normal alimentary canal ever develops saprophytosis. There is, therefore, considerable danger that a careless physician will putter with malt and diastases and overlook the important underlying condition.

NEW USE OF DRUGS FOR THE CURE OF DISEASE*

BY WILLIAM MORE DECKER, M.D., BUFFALO, N. Y.

THERE is so much new thought, and so many new discoveries, nowadays, that man is kept on the run, to keep in touch with progress. Day and night, man is confronted by incessant changes. We stretch our cables across the seas, and encircle the earth with our electric wires; but, scarcely is this stupendous achievement in successful operation, before the wireless message is announced. On every hand, in every branch of knowledge, in religion and in science, changes, as great and marvelous, are in operation. Turn to our own chosen field of labor. Behold what radical changes have occurred in Pathology. A quarter of a century ago the cause of disease was a mystery. To-day, we know, that the cause of most all diseases is some form of life. I believe I may truthfully say that there would be no disease, if there was no fixed, false, psychic impressions; no brain, or nerve fag; no faulty metabolism; no mal-nutrition, nor defective elimination; and above all, no life, that inhabited other life. And, I can also, affirm, that there is no healthful, normal life, that exists entirely, independent of some other life; so that we arrive at the following conclusion, that not only the health, but the disease of a life often depends on some other life. The co-relation of life with life, whether it be for disease, or for health, is expressed by the new term—Symbiosis, which means living together. There are many examples that illustrate Symbiosis. In the vegetable kingdom it has been discovered that the nodules on the roots of the clover family are necessary to the health and growth of the plants. The life that forms these nodules, stores up nitrogen in its habitation, which is made use of by the plant, and later by the agriculturist to fix nitrogen in the soil.

Again, the microscopic Radiolaria that live in the ocean, and which belong to the order of protozoan rhizopods, are inhabited by certain algae (zooxanthellae), which seem necessary to their life. The algae are nourished by carbondioxide, formed by the animal tissues, and breathe out oxygen, which, in turn, serves as food for the animal—Hartwig.

We should recognize in all vertebrate animals, and in man, physiological symbiosis; and affirm that the life of man depends on the amoeba in his blood. That amoeba is the well known white-blood corpuscle, the phagocyte, of which we have heard so much of late.

Is the amoeba, which normally belongs to man, an organism? If so, we have a physiological symbiosis in man. I believe such to be the case. The amoeba passes over into the human organism with the spermatozoa at the time of conception. It also enters the impregnated ovum from the female organism, so that it is in evidence at the very conception of life.

Other amoeba foreign to man are found in fresh water, also salt water—the ocean. All, or nearly all, the characteristics of that amoeba are possessed by the white corpuscle—the amoeba in man's blood. Our blood is a bit of tropical ocean that washes the shores of our anatomy. It has its tides and its life. Many years ago, Virchow affirmed that every cell has a parent cell. That statement has become a fact as regards the amoeba in man's blood. This unit of life, this protoplasmic cell, meaning first creation, this leucocyte—develops, divides and is reproduced like the amoeba in salt or fresh water. It has the same digestive vacuole, which answers for stomach, the same digestive ferments, or enzymes; and it, the phagocyte, imbibes and digests food. It takes on and gives off what is not digested or retained, the same as the amoeba not found in man; and its mode of action is the same. It takes on oxygen, gives off urea, and has much the same metabolism. Chemically, it is quite the same—alkaline in life, acid in death. Verily, what more is requred to establsh the similarity and claim to an organism? Accept this theory, and we have new light on physiology, pathology and materia medica.

This ever present phagocytic organism, the amoeba in man's blood, plays an important part in the new use of drugs, for the cure of disease of which I shall speak ere long. But before taking up the new use of drugs let us dwell briefly on the individual character of disease.

*Read before the Clinical Club, at Buffalo, N. Y., Monday, April 26, 1909.

When life becomes the etiology of disease we can no longer regard disease as simply a morbid process. Disease is one kind of life, invading the territory of another kind of life, and acting in opposition to that life. Hence, in pathology of this class we do not treat disease, but life. I sometimes think physicians do not give sufficient thought to microbic and bacterial life. We must regard such life, as distinct and special life. The difference in bacterial life is as great as the difference in various types of visible life. Each type of bacteria is a special, distinct life, with its own peculiar characteristics. One form of bacterial life differs as widely from another form as a dog differs from an elephant, or a bird differs from a fish. Life, whether visible, or microscopic, goes by individuals; and every life is a special life, whether high or low in the scale of creation, or whether in the form of man, beast or bacterium. The individuality of life runs all the way through creation, and is as distinct, peculiar and characteristic in life microscopical as in life visible; and the individuality of the life, which is the cause of disease in man and animals must be emphasized and clearly recognized. Disease, therefore, is life, and it is individual life. We must hold to the individuality of the life that produces the disease, and recognize that. And knowing the character, peculiarities, the special traits of that life, we know the disease it originates.

The individuality of the life of disease is constantly being brought out more clearly in the practice of medicine. This is shown in the different types of dysentery. A few years ago, dysentery was dysentery, now there are as many distinct and separate kinds of dysentery as there are different kinds of life that produce that disorder. We individualize dysentery because we must individualize the life of the disorder. The same is true of pneumonia, malaria and many other disorders. The individuality of disease has so far advanced that it now becomes a fact that a disease produced by a special life must be treated by special serum obtained from that special life in order that a cure may result. If the individuality is not recognized in the treatment the treatment fails.

To recapitulate. We have declared there is a symbiosis in man. We affirm that the white-blood corpuscle is a special organism—the amoeba in man's blood, which is the symbiot that lives together with man. We have also affirmed that bacterial invisible life is as distinct and special as any other life; and, that we must recognize the individuality of disease, because disease is life—individual life.

Let us now take up the new use of drugs. For a number of years I have had in mind a new use of drugs for the cure of disease, that is, making use of drugs, which either increase the number of phagocytes in man's blood, or that increase the energy of those phagocytes. I knew so little about the topic that I had nothing much to offer except a few facts, but it was my conviction that drugs could be thus used successfully and quite extensively in various disorders common to mankind. I delayed writing on this topic because I could not make investigation for myself, and wanted to obtain some reliable information in reference to phagocytosis. We now know that some of the white blood corpuscles are phagocytes, and that they take up bacterial life and digest it, or imprison such life, thus defending and protecting the system against the injurious effects of bacteria. The action of this amoeba in man's blood is many-sided. It sometimes acts on the poisons produced by the bacteria. Again, it acts on the bacterial life, and again it may digest living or dead material taken into its organism; or, it may imprison the foreign material or life for a longer or shorter period. It has still another mode of action, and that is to die and burst, liberating all its contents into the blood stream, which disaster may be ruinous to the life of man, or otherwise, depending on the amount of poison liberated, and the number of phagocytes thus destroyed simultaneously.

The phagocytes that come from the bone-marrow are termed eosinophile leucocytes, also poly-morpho-neu-clear. Those from the endothelial and tissue cells are the large "hyaline." Those that come from the lymph-glands are called lymphocytes. The nodules, or glands on the lymphatic system, like the nodules on the roots of the clover family, contain life, on which man's life depends. Now, regardless of the many and varied actions of the phagocytes, and the different types, it is a fact that there are agents which, if taken into the human system will increase the number and the energy of the phagocytes. It is affirmed by Dr. J. George Adami that there is no sickness produced by bacteria in man, but what the phagocytes at some stage of the disorder, act more or less energetically upon the invading hosts. In Adami's Pathology, just off the press, volume 1, page 319, he states, "the eosinophile leucocytes in the blood, that means the phagocytes that come from the bone-marrow, are largely increased by the presence of almost every form of vermiform parasite. In other words, intestinal parasites produce eosinophilia. Adami affirms that the eosinophilia cannot be explained save on the assumption that there diffuses from the parasite into the tissues, and so into the blood, some substance which, conveyed to the bone-marrow, there stimulates the proliferation and increased production of these cells, namely, phagocytes. Therefore, from some of the vermiform parasites or similar life, perhaps, angle worms, we may obtain a drug or serum which will increase the number of phagocytes, if administered in suitable cases when extra phagocytic action is required to bring about restoration to health.

When I was with my preceptor, years ago, he most always gave minute doses of quinine in the treatment of typhoid patients, regardless of what other drugs he made use of, as seemed indicated. He had learned that such use of quinine was beneficial to his patients, but he did not know why. He regarded the effect as tonic. We now know that the benefit which was obtained from small doses of quinine was due to the action of that drug on the phagocytes—the amoeba in man's blood. Quinine does not have this beneficial influence over the phagocytes, unless given in small doses.

We can now cite several other agents which act in a similar way to increase the number and energy of the amoebic organism, the phagocytes.

Nuclein—This must be used hyperdermically, as it is decomposed by the gastric juice.

Nucleinic acid—Five per cent. solution, used in doses of from 5 to 20 minims. If the dose is large enough, it is rarely necessary to give more. Improvement begins in from six to twelve hours. There are no harmful results. Authority—Hubert Allison Becker.

Cinnamic acid—Injected subcutaneously causes increase of leucocytes in varying degree. Dose, 1 1/2 to 5 centigrams, (1/4 to 3/4 grain). Injected twice weekly. Dose by the mouth, 3 to 8 milligrams (1/20 to 1/8 grain) twice daily.

Zimphen reports a new cinnamic acid compound, which he has named Simphen, which is chemically sodium-metaoxcyanocinnamate. This preparation is claimed to be non-toxic, but it must not be injected into the veins, as it decomposes on contact with the blood, and is then prone to cause sudden death.

Turpentine.—Dr. Fabre reports the use of turpentine in the Lyons maternity. He ascribes his success due to the use of essence of turpentine, stating that whether the turpentine is ingested by the mouth, absorbed through the skin, lungs or by subcutaneous injection, or introduced into the cavity of the uterus, the action is the same; namely, that of an internal, non-toxic, antiseptic. The organism tolerates comparatively large doses of turpentine, which has a peculiarly destructive action on the streptococcus. It also induces hyper-lucocytosis, and raises opsonic power of the blood. He has found that from 4 to 10 grams (1 to 3 drachms) by the mouth, and 2 grams (30 grains, subcutaneous injection, are small doses, and practically free of danger.

Isotonic saline infusion acts as a substitute for blood in cases of severe hemorrhage, and in all probability increases the number of leucocytes, and hastens the formation of new blood.

Alcohol.—Alcohol increases the bacteriolytic power of the blood, when administered in cases of sepsis. Authority—Dr. Hobert A. Hare.

We have only cited a few agents which act on the phagocytes for the cure of disease, but our materia medica should be reproven on mankind, and special note made of the action of drugs upon the amoeba in man's blood. Note the effect on the increase, the decrease, the stimulation, or depressing effect of the agent upon the white-blood organism; also, what influence the various drugs have on the amoeba to increase its appetite, and the digestion of what it takes into its organism. We positively know that this phagocytic amoeba in man's blood can accomplish very much by its digestive powers. That it possesses a digestive vacuole and digestive ferments, has been already established. And it digests food, not only for itself, but for man. I thoroughly believe that digestion in man is not completed in the intestinal tract, but that it begins in the mouth, and ends in the phagocytic amoeba.

To get some idea of how much the normal, amoebic organism in man can accomplish in opposition to bacterial forces that attack the human system, let us turn to the honey bee. A large hive of bees frequently contains as many as fifty or sixty thousand workers. Say the hive contained fifty thousand. Now, if each one of these bees makes only one trip for honey, and each one only brings to the hive one-half drop of nectar, the total quantity gathered would amount to 31 ounces, plus, that is, nearly one quart of honey.

In a drop of good blood there is about ten thousand white corpuscles, or that number of physiological amoebas. In a dram of good blood, therefore, there would be one million physiological amoeba, and the number of amoebas in the total quantity of blood in man's system would be so great that it could not be expressed in figures or any other way. What invisible organisms accomplish for good or ill is marvelous, and often beyond the comprehension of man. "Every little bit, added to what you got, makes a little bit more." The above citations forcibly impress us with the wonderful influence accomplished by the amoeba in the effort to maintain man in a normal state of health. And the amoeba would always be victorious were it not for the fact that bacterial life is just as numerous as amoebic life and works along the same lines of "Every little bit." And their little bits, which go by the billions, and numbers beyond record frequently offset the best efforts of the amoeba.

Some of the gentlemen present may be of the opinion that the new use of drugs under consideration is nothing more or less than Dr. Wright's method of treatment by opsonins. That is, using serums or drugs to raise the opsonic power of the blood. Not so. The fountain-head of a river often starts so near another course that only a slight divide separates it. The inventor, in working out his discoveries, often comes very near to what might be another great invention, but sees it not. Romance tells a similar story:

"—Two shall walk some narrow way of life,
So nearly side by side that should one turn
Ever so little space, to left, or right,
They needs must stand acknowledged face to face,
And yet,—
They seek each other all their weary days,
And die, unsatisfied."

The new use of drugs, while it comes so near to the opsonic theory, differs widely from Dr. Wright's method of treatment. A miss by a hair is as good as a miss by a mile, but more uncomfortable,—in love, often painful, in medicine, safe.

The index of time is the dial on the clock. The index of temperature is the thermometer; and the so-called opsonic index is the amount of an unknown substance in the blood; that, according to the theory, must be there, or the phagocytes will not act. Where this unknown agent (termed opsonin) is developed—where it comes from is not known. It is claimed that the phagocytes will not take up the bacteria unless this unknown substance is present. If there is plenty of unknown substance the phagocytes act energetically. If there is little of the unknown substance, then, the phagocytes refuse to act, or acting in a feeble manner, that is, do not accomplish much. The opsonin theory seems to me unsound in many respects. The opsonin tempts the phagocytes to eat, or prepares, puts in condition, flavors the bacteria so that the phagocytes can devour them. Hence, the opsoninic index is not based on the total number of leucocytes that are phagocytic, but on the number of bacteria eaten by a few phagocytes—30 or 40. If a few phagocytes only

eat a few bacteria the index is said to be low. If a few phagocytes eat many bacteria, then the index is said to be high. What is high? What do we mean by high index? We mean that the unknown substance is in the blood in considerable quantity. A low index means that there is not much of the unknown substance in the blood. The index is an index of the unknown, opsonin substance, not an index of the phagocyte, and his energy.

Dr Wright uses serums containing salt in solution, and it is a question whether salt is not as much of an opsonin as anything else in the serum because it is a fact that certain solutions of salt will increase the appetite of the phagocytes and in that way falsify the opsoninic index, because the phagocytes take up bacteria, not because of the increase of the opsonin in the blood, but because of the salt solution which enters the human system when the serum is used. Ex-sanguinate man and the opsonin is gone, but normal salt solution restores him, because it restores the blood. The corpuscles, red and white, are regenerated rapidly by normal salt solution.

Again, if a sterile, superlative, inflammation be induced by the introduction into the pleural cavity of finely powdered glass or aleuronat (a vegetable protein), the exudate, rich in leucocytes, possesses distinctly more pronounced bactericidal properties than does the blood plasma and other body fluids, or even the blood serum of the same animal. Where is your opsonin? There is no blood in the plural cavity, yet the phagocytes are there and accomplish more bactericidal work than when in the blood, where the unknown opsonin is looked for. (Reference, Adami, Vol. 1, page 515).

In practice, the opsoninic treatment is no more, nor less, than the use of serums made from the specific bacteria which causes the illness. This serum, or its ingredients, may be regarded as an opsonin in the sense that the composition is not actually known. It contains poisons which toxicologists have been unable to name or classify, and if otherwise, why should the ingredients in the serum increase the unknown opsoninic substance in the blood? The use of serums by Dr. Wright can only be regarded as treatment by similars.

One more step and I am done. The law of similars is a fact, but there has never been brought to my attention a satisfactory explanation for it. We can explain treatment by similars in all diseases due to bacterial life on the ground that curative results are obtained by reason of the operation of the law of self-preservation. To illustrate:

If an infuriated bull were chasing you through a field, and you became transformed into a cow his wrath would turn to love. You would be safe, and go on your way unharmed. Saved because of the likeness of life to life.

The instant the club was drawn to slay Captain John Smith, that instant the form of Pocohontas darted as a mantle over him, and the chief cried halt; for a blow at his daughter was a blow to himself. Because of the nearness of life to life, she was saved; and saved Captain Smith.

The law of self-preservation is as operative in disease as elsewhere; for disease is life, or is engendered by life in microscopic form. No life strikes a blow at itself. Why, because of the law of self-preservation. And the living forms (bacteria) that induce disease in man and other life are as obedient to the law of self-preservation as life in general. No bacteria seek their own destruction. They strike no blow at themselves. They produce disease in other life, but not disease in their own life. Hence, if they are confronted by their own, they quit. They wage no war on their own likeness because of the law of self-preservation. You do not need to put their own living progeny in their road to arrest their devastating progress; but it is enough if diluted decoction or attenuated serum of that life confront them, or some preparation so nearly like their own vitality that they halt because they will not strike a blow at themselves or their likeness. The law of self-preservation is above all laws—inherited, constitutional, intuitive, and always asserts itself—in all life, whether that life be high or low, simple or complex, man or microbe.

There is very much more in this paper than has been stated, but the points we claim as new, are:

First—Normal, physiological symbiosis in man.

Second—We claim there is a distinct, special organism in man's blood, namely, the white-blood corpuscle which is the symbiot, the normal amoeba in man.

Third—The use of drugs or other agents that influence this symbiot in its reproduction and to wage war against bacterial life in the human organism.

Fourth—That digestion in man is not completed in the intestinal tract, but by the amoebic symbiot—the phagocytic white-blood corpuscle.

Fifth—That treatment by the law of similars can be explained rationally by affirming that it operated along the lines of self-preservation.

Brothers of the healing art:—

We are only on the borderland,
"The highest study of mankind is man";
But he who trods the road aright,
Will behold in man, God—the infinite.

PSYCHOTHERAPEUTICS.

BY JOHN B. HUBER, A.M., M.D.,
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THE whole subject of psychotherapeutics is nowadays in no end of a pother. The only man who feels absolute assurance in respect of it is the quack who, of course, knows least about it. And now the field is beng entered by excellent clergymen who (instead of applying their minds to their legitimate business of formulating a theology by which the rest of us may live well and die well) are taking it upon themselves to do the work which lies properly in the sphere of medicine. I by no means essay Hamlet-like, to develop order out of this chaos; I shall be satisfied indeed if I can lay down certain basic principles upon which a psychotherapeusis must be founded.

The whole gist of the uncertain condition of psychotharapeutics lies in our inability to form a definition of mind which will be wholly acceptable. What is mind?

When we have answered this question we shall have provided a logical basis upon which to build a system of healing mental diseases. *Punch's* much quoted system of philosophy is here *apropos.* "What's mind? no matter; what's matter? never mind. What's spirit? it is immaterial." This is the nearest approach we have come to any clear definition; it has, at any rate, the method of being incontrovertible.

Recognizing the difficulty of formulating a definition of mind that will satisfy the philosopher one may at any rate speak of mind as *consciousness;* it is this which distinguishes inorganic inert matter from moving, organic sentient matter. And adopting this view of mind we may next consider the manner in which mind influences the body; this has been nearly as old a theme for speculation as that of the nature of mind itself. The metaphysician holds that the influence is entirely mental; the materialist holds the opposite—that the real, the essential influence is that of the body upon the mind. Then there is the monist, who rather prevails in this era, standing for the oneness of mind and matter. Until we have discovered the nature of mind, and what matter is, we cannot positively adopt any position to the complete exclusion of others. However, medical science and modern psychology have established facts which are perfectly intelligible and reasonable. It is matter of common experience that mind and matter are factors which are conditioned upon each other; they are essentially complemental to each other. On the one hand we realize that through the intellect and the will the mind does dominate the body; and the body which through the senses, is itself reacted upon by its environment, in turn affects the mind.

A great mistake that is made in considering this subject is to confound mind with brain. We have to differentiate between mind and the mechanism in the body through which mind asserts itself. Mind permeates the whole organism through the brain and its nervous accessories; these latter are but the psychic machinery; they are not mind.

Prof. M. A. Starr * pertinently observes: A knowledge of the structure and functions of the central nervous system is an essential preliminary to the study of its diseases. The human nervous system is the most complex of all nervous structures, and is the culmination of the process of evolution. How has the infinitely complex central nervous system in the human being been evolved?

The simplest form of a nervous system consists of a single mass of gray matter with a sensory and a motor nerve. The mass of gray matter receives impulses sent from the surface by the sensory fibre, acts in response to the impulsive; and the action is transmitted to a motor mechanism by the motor nerve. For example, an oyster closes its shell when it feels any object touching its surface; the parallel action in the human system is a spinal reflex, such as a knee jerk. Several such single masses may be joined to one another, each with its sensory and motor nerve; these masses receive impulses in succession and act in succession. Examples of this are the wavy motions of a jelly-fish or the progress of a caterpillar. A compound type of nervous system consists of several subordinate masses joined together and presided over by a single higher mass, which is joined to each of the lower masses. The higher mass receives impulses from the lower masses, not directly from the surface; it sends impulses to the motor mechanisms through the lower masses, not directly; it secures a certain definite succession and combination of action in the lower masses. For example, the nervous system of a frog experimentally deprived of its hemispheres, is capable of automatic acts of swimming. In man there is the automatic act of respiration; the facial, laryngeal, intestinal, thoracic and diaphragmatic respiratory muscles act in definite succession and rhythm in the act of breathing; and this act is presided over by a single centre in the medulla controlling the lower medulary and spinal centres. The highest type of nervous system is the complex type; there are the lower centres as in the simple type; thus are the higher centres controlling the lower centres, as in the compound type; there is a supreme mass controlling both the others. This is the form found in all vertebrates, and the degree of evolution in the highest or supreme mass determines the place of the animal in the scale of intelligence. In man the supreme mass is the cerebral cortex, the next lower or automatic centres are the optic thalami and corpora striata, including gray masses in the cerebral axis; the lowest or reflex centres are the cranial nerve nuclei in the cerebral axis and the gray matter of the spinal cord segments: these distinct gray masses are joined to one another in all possible combinations by means of the white nerve tracts, which pass in all directions around and in them.

Thus the mental machinery (not precisely mind itself, as I must reiterate) is made up of nerve cells and nerve fibres emanating from the cells; and by means of the terminal filaments of these fibres the various parts of the body are intimately connected with the main nervous centres, chiefly those in the brain, where minds manifests itself most. This psychic machinery is divided broadly into the two systems—the cerebrospinal and the sympathic.

The cerebrospinal system is concerned chiefly with conscious life. It concerns all voluntary movements, and through it all pain is felt in greater degree. When we walk, or speak, or read, or take food into our mouths, or do any one of the infinitely various things characteristic of conscious life we do it through the cerebrospinal system. And under normal conditions the higher centres in the brain dominate the organism, being connected as they are by means of nerve fibres with sensory, motor and all other centres. It is they which under abnormal conditions (such as result from inordinate excitement or hypnosis or undue suggestion) are held, in obeyance, and, as it were, put out of action. Their growth and evolution is co-ordinate with progress of civilization; they represent the latest development in the evolution of living beings; they are such centres as are concerned with speech, memory, ideation, judgment, reason, and the like. The sympathetic system has to do mainly with unconscious life. Its ganglia are distributed throughout the organism, but are chiefly in the thorax or abdomen. Through fibres emanating from these ganglia the sympathetic system controls the involuntary actions of the various organs, the work done by the heart, the lungs, the stomach, the liver and so on. In the process of digestion, for instance, when the food is selected, taken into the hand and transferred to the mouth, and when the jaws close upon it, we act voluntarily under the

* Lectures on Nervous Diseases.

guidance of the cerebrospinal system. Upon these acts, however, there follows a flow of saliva by which the food is partly prepared for its reception in the stomach; the gastric juice proceeds to flow and to permeate the food; the gastric absorbents carry some of this food to the blood; and by peristalsis the remainder is moved on to be further acted on by the intestinal digestants; all these latter movements are involuntary and are controlled by the sympathetic system.

The distinction is manifest under anesthesia. Here all voluntary movements cease; the arms lie limp; the patient has not the power to raise them; the knife does not pain him; the cerebrospinal system is out of action; it has lost control; it is in abeyance. But the vital processes are going on just as before anesthesia; the heart is beating; the lungs are respiring; the various organs functioning; the sympathetic system is alone carrying on the vital processes and maintaining life.

As we know, the distinction between these two systems is a very broad one; it is by no means exactly defined. They are by no means absolutely separated from each other; filaments connect cerebrospinal centres with sympathetic centres, and vice versa; we have here, in effect, two parts of an immense telegraphic scheme, the stations of both being intimately interrelated. And the gist of the whole matter of psychic influence over diseased conditions lies in the fact that our unconscious life, as directed by the sympathetic system, is constantly being affected through the cerebrospinal system by our conscious life and by the external world.

The condition of the organism resulting from shock exhibit well, though to an exaggerated degree, the phenomena we are considering. Shock may be defined as a disturbance of the functions of the nervous mechanism, by means of which the harmony of action of the great nervous centres, more especially of the sympathetic ganglia and through them of the various organs of the body, becomes deranged. Whether it results from sudden physical injury or from intense emotion, shock exhibits similar manifestations. The sufferer will become pallid and giddy, his heart will beat tumultuously, and he will gasp and catch his breath; following upon this there will presently come a sense of physical and mental depression. Or if the shock is very great, the sufferer will become pale, cold, faint, and trembling; his pulse will be weak and fluttering, he will have a nausea and a cold sweat, his temperature will fall, his speech and thought will become feeble and incoherent, his mind will be depressed and disquited and his countenance will exhibit these disturbed mental conditions. In those possessed of unusual praise and fortitude these phenomena will not appear at once; in battle, for instance, or amid great excitement, an appreciable interval may elapse between the cause of the shock and the appearance of the symptoms due to it. There will be headache, sleeplessness and prolonged diminution of mental power, which has manifestly become weakened. Evidence that the sympathetic system has become involved will be seen in movements like those seen in sufferers from chorea; there will also be tumultuous heart action, panting and dyspnoea under exertion.

To consider a little further how our mental states are "mirrored in the flesh," how our conscious life is constantly influencing our unconscious life: we may conveniently divide the mind into the intellect, the will and the emotions. We need enumerate here only a few among the many states of mind. Among the intellectual are reason, memory, judgment, association of ideas; we comprehend the term "will" sufficiently for the purpose of this essay; among the emotions are grief, despair, fear, terror, anger, joy, hate, hope, pride, love, etc. Most of these mental states are combinations: courage, for instance, is the physical trait strengthened by the intellectual force of reason, or by the belief in the justice of the cause at stake; in faith are combined the intellectual attributes of attention and expectation and the emotion of hope.

I think that we may now deduce the following principles: Thought strongly directed to any part of the body will increase its blood supply and consequently its sensibility. These effects are especially conspicuous when thought is associated with a powerful emotion. When not directed to any special part an excited emotional condition induces a general abnormal sensitiveness, such as is manifested by intolerance of noise and light, irritability of the skin, etc. Thought strongly directed away from any part, especially when the thought is occasioned by strong emotion, lessens the sensibility of the part. The activity of the higher centres during deep intellectual occupation is likely to exclude consciousness of impressions made upon the body; and an absorbing emotion may produce the same result. There is no sensation excited by agents acting upon the body from without which cannot be excited also from within by emotional states. In the latter event the emotions affect the sensory centres; and the resultant sensations are referred by the perturbed mind to the point at whieh the nerve terminates in the body. Mental states may excite, pervert, or depress the sensory, motor and sympathetic ganglia and through them cause changes in sensation, muscular action, nutrition, secretion and other processes in the various organs. Violent emotions may modify nutrition. Various forms of disease originating in perverted or defective nutrition may be caused primarily by emotional disturbance. And the emotions, by causing a larger amount of blood to be transmitted to any organ, increase sensibility and warmth in it and so stimulate its function. And in the same way may the emotions influence inflammatory conditions.

A number of positions are taken nowadays which may seem to be entirely new; they are, in point of fact, probably as old as human thought. Plato, for example, wrote: "Physicians cure the body with the mind, and the mind which is or has been sick, can cure nothing." Again: "the eye cannot be cured without the rest of the body, nor the body without the mind." There is this to be found in Burton's "Anatomy of Melancholy" (1651): "Some are molested by phantasie; so some, again, by fancy alone and a good conceit, are as easily recovered. . . . All the world knows there is no virtue in charms, etc., but a strong conceit and opinion alone, as Pomponatius holds, which forceth a motion of the humors, spirits, and blood, which takes away the cause of the malady from the parts affected. The like we may say of the magical effects, superstitious cures, and such as are done by mountebanks and wizards. As by wicked incredulity many men are hurt (so saith Wierus) we find, in our experience, by the same means many are relieved. . . . Imagination is the *medium deferens* of Passions, by whose means they work and produce many times prodigious effects; and as the Phan-

tasie is more or less intended or remitted, and their humors disposed, so do perturbations move more or less, and make deeper impression." This was printed in 1651.

In his lectures on surgery, in 1786, John Hunter drew attention to the "animal magnetism" of Mesmer. He explained, on the principle of attention and expectation, the phenomena which he witnessed, resulting from Mescalculated to affect the imagination. When the magnetized, but first refused, because the spasm on my vital parts was very linely to be brought on by a state of mind anxious about any event . . . and I feared it should be imputed to animal magnetism. But consiering that, if any person was affected by it, *it must be by the imagination being worked up by the attention to the part expected to be affected,* and thinking I could counteract this, I went; and accordingly when I went I was convinced by the apparatus that everything was calculated to affect he imagination. When the magnetizer began his operations, and informed me that I should feel it first at the roots of my nails of that hand nearest the apparatus, *I fixed my attention on my great toe,* where I was wishing to have a fit of the gout; *and I am confident that I can fix my attention to any part until I have a sensation in that part.* Whenever I found myself attending to his tricks. I fell to work with my great toe, working it about, etc., by which means I prevented it having any effect upon me." In this statement of John Hunter (especially the words italicized), is contained the gist of the whole subject of purposive psychic influence over diseased conditions.

Johannes Müller stated, in 1838, "The idea of a particular motion determines a current of nervous action toward the necessary muscles, and gives rise to the motion independently of the will." Again, "Any sudden change in the ideas, though without emotion, and having reference to mere external objects, may incite involuntary movements." Again, "it may be stated, as a general fact, that any state of the body, which is conceived to be approaching, and which is expected with certain confidence and certainty of its occurrence, will be very prone to ensue, as the mere result of that idea —if it does not lie beyond the bounds of possibility."

Swedenborg, the mystic, wrote, "Nor can anything be turned over in the mind, that, if it please, may not be portrayed in the extremes, by means of the fibres; for instance, in action by the muscles. There is a likeness of the brain in every fibre. The fibres carry with them the animus of the brain. Cerebrum and cerebellum are universally present in the body by means of the fibres."

The *Autocrat of the Breakfast Table relates,* "I remember a young wife who had to part with her husband for a time. She did not write a mournful poem; indeed, she was a silent person, and hardly said a word about it. But she quietly turned of a deep orange color with jaundice."

The Journal of the American Medical Association (February 23, 1907) presents editorially a consideration of various forms of psychotherapy: Some form of mental treatment has been in use since the beginning of the race. The priest-doctor, when dealing with a mind diseased, would try first exorcism, hoping thus to expel the devil or demon that was possessing the patient. Failing in this he would employ some such pharmacotherapy as the administration of asafoetida; and the case would be indeed bad when one evil spirit could endure to remain in a body saturated with this substance. Hippocrates was a thorough-going scientist, no doubt he appreciated well the value of suggestion which we now use as a psychotherapeutic measure. In the middle ages Paracelsus, "who was not altogether a quack," employed magnetic healing. Mesmer a century ago, was able to convince the most brilliant and intellectual minds in Europe of his powers. Then came animal magnetism, theosophy, spiritualism, Dowieism, and a host of others easily to be recalled to mind; we still have with us the breezy assumptions of Eddyism. Today hundreds of "faith cures," "mind cures," mental healing and the like, infest and corrupt our civilization. I hasten to add that the Emmanuel Movement is not to be classed among charlatanries, as everyone knows who knows anything about Dr. Worcester; he is an earnest and devoted altruist, though the Emmanuel Movement which he established is, I believe, an ill-considered one. The legitimate labors of Beard, Myers, Charcot and their colleagues evolved hypnotism which was soon found, however, to be a dangerous weapon in the hands of the incompetent or the unscrupulous; it was realized that by its means another psychosis might be substituted for that which it was sought to dissipate. The "psychoanalytic" of Janet and the labors of such men as Dubois and Jastrow followed, so that suggestion, by which we seek to influence the subconscious mind, is now much in vogue as a psychotherapeutic measure. In contradistinction to this is the method of "education, explanation and persuasion," which Prof. Barker, of Johns Hopkins has advocated and used with success.

Barker finds the main difference between suggestion and persuasion to lie in their relation to the higher psychic functions. In suggestion these higher functions are either not utilized or they are inhibited; in persuasion on the other hand, they are called into action, the mind being won over by the presentation of suitable reasons and not by the exertion of authority, force or fear. Which method should the physician pursue? The psychotherapy must be as varied as the variety of cases to which it is applicable. For one individual persuasion may be appropriate; for another suggestion; to some cases even hypnotism may have to be induced. Psychotherapy is applicable in hysteria with its most varied and protean manifestations; in psychasthesia and neurasthenia; when there is psychic incompleteness or physiologic insufficiency; for the obsessed; in nervous crises; in such gastropathies as anorexia and nervous dyspepsia; in insomnia; in psychoneurosis and in all abnormal states which do not seem to have a basic, organic or structural lesion. An absolutely essential preliminary to a rational and sensible psychotherapeusis is a thorough diagnosis. It is much worse than absurd to try to remove, by persuasion or suggestion, a headache dependent on an insufficient eye muscle, a nasal spur or an inflamed sphenoid; or a pain in the chest of tubercular origin; or a pelvic pain which has for its origin a lesion which surgery alone can remedy.

Esophagoscope With High Frequency Current in Treatment of Cardiospasm.—Delherm and Guisez have cured cases by local application of high frequency currents by means of the esophagoscope.

They report these to the Paris Academy of Medicine, February 9, 1909, and in the Progrès Médical, February 20, 1909.

PARINAUD'S CONJUNCTIVITIS, WITH REPORT OF A CASE.

BY DAVID WEBSTER, M.D.
Surgeon to the Manhattan Eye, Ear and Throat Hospital, Etc., New York.

THIS disease is named after the physician who first described it, Dr. Parinaud, a Frenchman, who reported three cases of it to the Paris Ophthalmological Society some twenty years ago. The comparative infrequency with which the disease is met with is sufficient justification for publishing any case of the kind that comes under observation. The distinguishing features of this form of conjunctivitis are:

First.—It is ushered in suddenly with a rigor, more or less fever, and general depression.

Second.—Great thickening of the lids with slight muco-purulent discharge at the onset.

Third.—Large granulations, frequently polypoid and pedunculated, on the tarsus, the retro-tarsal fold, or the bulbar conjunctiva.

Fourth.—Erosions or ulcerations between or on the granulations.

Fifth.—Inflammation of the lymph glands on the same side, preauricular, cervical and submaxillary.

Sixth.—The disease does not spread to the other eye, nor do those about the patient catch it.

Seventh.—The prognosis is favorable, the disease terminating in recovery, without injury to the eyesight, in the course of a few weeks or a few months according to the severity of the case.

That the disease is due to an infection is evident from the general disturbance with which it is ushered in, but that it is due to an animal infection as Parinaud believed is by no means proven. Two of Parinaud's cases had to do with meats. One was a butcher's wife, the other lived in a house where meats were stored—probably a coincidence, as the few cases that have been reported since do not seem to bear out that theory.

The case that I here report was the only typical one that has come under my observation in a practice extending over many years. Miss Helen B., aged 30, stenographer and typewriter, on October 14, 1906, shampooed her hair. The same evening she noticed a tender lump in front of her right ear, and the next morning her right eye was red and the lids swollen. She entered the Presbyterian Hospital where she stayed a week, and through the kindness of the Superintendent I am able to give the Hospital records of her case, as follows:

Present Illness.—For three or four times in the past year she has had trouble with her eyes. At first patient says her cheeks feel feverish, and then in a few hours her eyes become inflamed, but after using boric acid drops in three or four days they are well. On Sunday night, four days ago she noticed there was a very tender lump at the angle of her jaw. On awakening the next morning the lids of her right eye were stuck together. She went to work and her eyes did not bother her, but she noticed the right eye was much swollen. It has continued so up to the present. This morning while at work her eye bothered her a little, but she had no pain and at about the middle of the day it blurred a little. The swelling on the jaw is not quite as tender at present.

Chief Complaints:—Oedema of right eye.

Pain and swelling at angle of jaw.

Physical Examination:—

Patient is a rather poorly nourished young woman, anaemic, frame slight, adipose scant, muscle poor, not dyspnoeic nor cyanotic, seems a trifle nervous and irritable, but not prostrated and not actually ill.

Eyes:—Left, normal.

Right, pupil equal to left; reacts equally. Conjunctiva injected, swollen, watery with thin purulent discharge. Congestion most marked in outer half. Upper eyelid is painful and tender, both lids swollen and oedematous, with considerable oedema of surrounding tissues in neighborhood of outer canthus.

Ocular movements normal.

No photophobia, though vision is weak.

No abrasions on cornea.

October 24, 1909.—Temperature nearly normal. Eye improved for two or three days then became worse again. Staphylococcus pyogenes albus found in culture. Smears negative.

Irrigated with solution of hyd. bichlor. 1-500. Patient has complained of no photophobia, simply of tenderness of upper lid.

Has occasional attacks of gastric fulness and distress following meals, and relieved by capsicum and cardamon. Is exceedingly nervous and almost hysterical at times. Sleeps poorly and has disturbing dreams.

October 26.—Condition of the eye not improving, rather worse now than three days ago, and patient is transferred to-day to the Manhattan Eye, Ear and Throat Hospital.

At the hospital the patient came under my care. She stated that the disease began with a feeling of coldness all over, but not a decided chill. This cold feeling was followed by sweating and by a mild delirium which lasted nearly all night. I found the lids somewhat swollen, considerable chemosis, and very little secretion. Upon the posterior surface of the upper lid, near its temporal extremity, was an ulcerated nodule, and a similar one on the bulbar conjunctiva directly opposite. There was a third ulcerated nodule further towards the middle of the lid, but with no corresponding one on the bulbar conjunctiva. The whole of the upper palpebral conjunctiva was coarsely granular. The cornea and iris were unaffected and the vision normal. The pre-auricular gland on the same side was enlarged and tender on pressure. There was a chain of swollen and tender lymphatics all the way down the side of the neck. Upon consulting with several of my colleagues we came to the conclusion that it was a case of Parinaud's Conjunctivitis. For a few days the eye was treated with ice cloths and argyrol, and small doses of potos. iodid. were given. But as this course of treatment seemed to make no impression on the condition of the eye it was abandoned and a bandage was applied. The eye was washed and the bandage reapplied twice a day. On October 30, about two weeks after the onset of the disease, we observed that the swelling of the eyelids and the chemosis were less. November 4, chemosis gone, ulcers on under surface of upper eyelid healed, but there is still some thickening of the conjunctival and subconjunctival tissues in the cul-de-sacs. Swelling of preauricular gland present, but less than on admission.

Blood count: Haemoglobin, 70 per cent.; erythrocytes, 4,798,800; leucocytes, 5,035.

No plasmodia present.

Temperature normal throughout.

Urine normal.

Patient allowed to go home.

December 9.—Patient comes to my office with eye well, and swelling of lymphatics absent. Has been at work for the past week.

March 24.—Patient has remained well.

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A HINT FOR THE ANTIVIVISECTIONISTS.

WE are not personally of the number who believe that the torture of animals is justified even for scientific purposes, nor are we one of the optimists who assure antivivisectionists that medical men never perform painful experiments on animals. There is, however, something about the word vivisection which sends shivers along the spine of humane persons and the general mystery of things medical to the lay mind, casts a shadow of horror over experimentation even when it is entirely lacking in pain. The great majority of experiments embraced under vivisection in the broad sense, are either entirely painless on account of anaesthesia, or involve no more discomfort than a needle prick or that of a disease which comes on spontaneously.

But even if we believed the most exaggerated accounts of the tortures inflicted by vivisectors, the pain thus inflicted would be a drop in the bucket as compared with that involved in rendering live stock into food and other economic products. Yesterday there appeared the account of a fine imposed on a railroad company for carrying a train of cattle forty hours without food or drink. The law places the limit at 28 hours. With due allowance for the various differences in intelligence, ability to stand on the feet and habits of eating and drinking between man and the quadrupeds, the transportation of live stock for any considerable distance involves a vast amount of preventable suffering. Incidentally, it causes a considerable loss by death in transit, traumatisms and septic processes resulting therein and the meat is by no means so wholesome as if the animals were slaughtered while in a normal state. A law requiring the feeding and especially the watering of stock with a limit of 28 hours is, in one sense, worse than no law at all, in that it places formal approval upon a condition which, as applied to many kinds of live stock and especially in hot weather, constitutes a torture fully as bad, so far as we can determine by the experience of human beings as that by the knife.

It has been remarked that "slaughter houses are places of blood and guts, and cattle are not smothered to death in masses of rose petals." Still, the process of slaughtering animals for food is one with which the humane societies might well concern themselves. A friend reports that he recently visited a large slaughter house; it was a dull season and only a hundred cattle an hour were being killed. Usually, he was told, the record would be 200. On the blackboard was a statement of the work of the one firm for the day, in its different slaughter houses. The total was about 50,000. Leaving out of account injection experiments and the like, we doubt if as many animals are vivisected in the entire world in a year and the vast majority are under full anaesthesia. It would be economically possible, on account of the concentration of business, to inspect satisfactorily the great majority of slaughter houses and even the smaller ones could be visited sufficiently often to secure a fair degree of compliance with any law that might be passed.

Theoretically, the slaughter of animals for food is all right from the humanitarian standpoint. Cattle are usually knocked on the head with a heavy hammer and, if the knocker is expert and does not miss, one blow suffers at least to stun the animal. It is then hoisted by its hind legs and "stuck" so that most of the blood escapes within a minute. Then the head is skinned and removed. From this point, what is done to the carcass has no interest to the humane societies, as the animal is certainly dead. But the animal is usually alive when it is hoisted for the "sticking" and when, as was the custom in one of the abattoirs our friend visited, the sticker immediately passed to the skinning of the head, and he could not help wondering whether the movements of the animal were entirely reflex. We should imagine that occasionally, the sticker might be unskilful or careless and that, even after the sticking, the skinning of the head might be regarded as a vivisection.

The slaughter of Koshr beef is decidedly trying even to one so cruel and hardened as a physician is supposed to be. The animals pass into the knocking pens the same as others, but instead of being knocked in the head, their fore legs are tied. The bottom of the pen then falls out, as for the "knocked" cattle, but instead of rolling out in a stunned condition, the cattle are struggling on their knees and lacerating them. We should imagine that this process might be almost as painful as being cut by a sharp knife. Then the cattle

are hoisted by a chain about *one* hind leg clear of the ground, are moved about to get them in exactly the right position, are let down until the neck is bent upon the floor, when their throat is cut. We should imagine that an iron chain supporting a thousand pounds or more of weight would hurt, especially as the animal is entirely conscious. All this process is done in a rather leisurely way. It seemed to our informant that the cattle were struggling on their knees for about five minutes before being hoisted and that another five minutes passed before the throat was cut. Perhaps it seemed shorter to the cattle, if animals have any sense of duration of time. At any rate, the total period was fully as long as that occupied in many vivisections and very few of the latter are performed without anaesthesia.

Smaller animals are usually strung up by the hind legs from hooks on an endless chain, passing from stickers to those who start the skinning process, remove the feet, heads, etc. Pigs, we understand, are very promptly immersed in scalding water by the same mechanism. We wonder, if in a series of many thousand animals disposed of in a day, all are given time to die before being flayed, dismembered or boiled.

In Brussels, pigs are stuck in small buildings, a few at a time and the carcasses are singed with burning straw. Animals awaiting slaughter may run through the fires and be singed. It has also been observed, at various places, that in guiding the animals to their doom, they are kicked, hit on the head and otherwise mauled.

We venture to suggest to humane societies that the aggregate amount of pain involved in the slaughtering of animals for food far exceeds that due to vivisection. All of it except the single and practically instantaneous death-dealing stroke, is avoidable. To give an animal time to die, requires merely setting back the whole system by a few minutes, for a whole day, not a similar loss of time for each animal. To require ordinary humanity in transporting and driving animals to their slaughter is not a matter which requires education of popular sentiment. One inspector at a salary of $75 a month could supervise as many animals in a week as are sacrificed in all the laboratories of the country, if not of the world, in a year.

SEWAGE DISPOSAL.

THERE is now a very interesting exhibit "of City Planning and Municipal Art" in the Twenty-second Regiment Armory in New York City, to which the Metropolitan Sewerage Commission has contributed a series of charts and diagrams. Visitors may thus get an idea of the conditions arising from the present method of sewage disposal in New York Harbor.

This metropolis is unique among the large cities of the world in having installed no scientific device for handling its waste products; we citizens generally consign this function to the currents of the Hudson and East Rivers and the tidal variations. How well these forces accomplish the work of sewage disposal will be observed in a number of charts at the exhibits. It is manifestly a mistaken notion that the outgoing tides will take waste matters rapidly seaward. To prove this numerous experiments were made. Floats were launched at various points in the East and Hudson Rivers and in the harbor; and their courses were carefully noted. One float was launched at Yonkers; it took eight changes in the tide to convey this float down as far as the Battery, and from that point to the outer bay its progress was still further impeded. A float launched at Hell Gate was carried on the outgoing tide as far as South Brooklyn, only to be brought back almost to the starting point at the next tide. In the Harlem River, where much sewage is dumped, floats were found to take all sorts of courses, travelling back and forth many times before they headed seaward.

We may judge by these tests what actually becomes of the thousands of tons of waste matter thrown into these streams. Such conditions are worst in the East River, where tidal changes are greatest; into this stream are thrown daily 335,600,000 gallons of sewage, whereas the Hudson in the "Metropolitan district" must carry 164,200,000 gallons, and the upper bay 104,100,000 gallons. To illustrate what becomes of the waste matter drained at the Battery, floats thrown into the water at this point started first upstream, then turned and were carried to Coney Island, and then turned again and came back to the harbor. "Sewage, if discharged at the Narrows, might be carried upstream as far as Warren street by one tide and return to Coney Island on the next. Sewage discharged at Robbins Reef might go to Sixtieth street, while sewage discharged at Fort Schuyler might travel to the end of the river, a distance of sixteen miles." One chart, showing the Manhattan shore line, will not, we judge, advertise our bathing pavilions. Each sewer outlet is marked with a blue dot, making almost a continuous string around the island; in some of the most densely dotted portions are red dots indicating bathing stations.

Another chart conveys the delectable information that oyster and clam beds are freely distributed in polluted parts of the harbor; we may here have the pleasure to examine the first map showing the oyster fisheries in and about New York. The shellfish raised hereabout are not supposed to be sold to the city; but it

is considered that adequate safeguards to protect our people against the consumption of these products is next to impossible.

Clearly, something must soon be done to dispose of our sewage scientifically. The exhibit here noted is invaluable in the public interest it will arouse on this vital subject. No remedy is as yet agreed upon. In the report, which will be issued about a year hence, the commission will consider the various relief means proposed. The preliminary report contains, however, one suggestion: to establish a system of grit chambers and screens, which might be erected at the important sewerage outlets, at a cost of one million dollars.

SICK ROOM LITERATURE.

WE should rather have said "literature for convalescents," for until this stage is reached, until the doctor's visits have begun to decrease in frequency there is no reading for the sick man; no mind can be actively engaged while there is a temperature on, a fevered tongue and the "chocolate colored taste" in the mouth. An English journalist has made quite a point of invalid literature; while publishers (he notes) have catered to every conceivable kind of reading-public, no one has thought of issuing a Sick Man's Library. The book-market is large enough; nevertheless it would not be easy to provide such a library. What would be the chances of coping successfully with the whims and fancies of the sick-room? The journalist referred to cites one experience:

"I have seen a usually strong-minded and intelligent man cause the nurse to summon a messenger-boy after the doctor's morning visit and send him for Rhoda Broughton's 'Nancy,' he tired of the idea of reading it before the boy came back, and send him to change it for Trollope's 'Barchester Towers,' revolt from the idea of reading that with his lunch, which had just arrived, and send for Ouida's 'Strathmore,' want something by that time to read himself to sleep for the afternoon, and send the boy for a cheap edition of 'Cranford,' revert to his first desire at tea time, and send out for three complete novels of Rhoda Broughton's, and end the day in a rage, with a temperature of 103 degrees, because the publishers refused to change any more books and the District Messengers' Company sent another boy with a bill and an anxious inquiry regarding their first messenger."

The fickle fancy here portrayed is natural to convalescence. One result of any severe illness is lack of concentration. No man can read a very large work after having experienced the stress of typhoid or of pneumonia. Reading must here be by fits and starts. We know of a colleague, a very strong man, indeed, who, in convalescence from typhoid found that his mind could not fix itself sufficiently to get through with the single page of a novel. Still as the time wears on, as the body gets stronger, as the mind takes on virility correspondingly there is an enormous literature which should be attractive and which should relieve the tedium of the forced confinement. Dickens, Thackeray, George Eliot, Trollope, Kingsley, Lytton, Wilkie Collins, Macaulay, Froude, Addison, Milton, the Shakesperean Comedies, Poe, Hawthorne, Mark Twain, Balzac, Dumas, Hugo, Homer, Lamb furnish a few of the treasures the convalescent would enjoy. Nor is it only the light, the flimsy and the amusing literature which will attract him. The fat classics with their long chapters and built-up sentences are often seized upon with avidity; "the length and the roll and the polish of the Victorian sentence is to the tired nerves like the long swell of the sea." On the other hand, "our modern, brilliant, staccato literature would soon wear down an invalid's nerves." The funny story will not always go; it is very bad indeed for a healing cicatrix after an abdominal operation. In such instances Mark Twain's "Jumping Frog" must be kept out of the sick room as sedulously as we would a stick of dynamite.

THE ACTION OF PERFUMES.

THE general impression regarding perfumes is that the sole result of their action is to please through the olfactory nerve; but other things occur from their use.

The vapors emitted by essential oils are powerfully antiseptic. The bacillus of typhoid fever is killed in a dozen minutes by the oil of cinnamon; in thirty-five minutes by the oil of thyme; in forty-five by Indian vernain; in fifty-five by geranium; in seventy-five by marjoram; in eighty by patchouli. Lavender and eucalyptus destroy bacteria.

The influence of odors and perfumes is very marked upon many people; some there are who cannot remain where lilacs are in full bloom; others find jasmine insupportable; many are given a violent headache and others physical distress by heliotrope, tuberose and wall-flowers.

It is good therapeutics for some nervous patients to have them inhale violets and heliotrope; sleep may thus be induced. The sensitive and nervous are easily affected by odors of flowers, and nurses have found it expedient to remove flowers from the sick-room. Florists, constantly working among flowers, have not infrequently suffered vertigo or downright fainting.

The Japanese privet, a plant of the olive tree family, having white blossoms and flowering in July, is apt

in that month to create great annoyance. The odor of the Mirabilis Jalopa, emitted at sunset, is very powerful; one may then see moths, attracted by this perfume, to which they fall victims. At Cannes, Nice and Menton are gardens where the Datura arborescens, with its large white flowers, emits so powerful a perfume that those in close proximity become drowsy and are prone to sleep. The botanist Ehret, while sketching the Aenanthe saffron, was seized with serious giddiness. Foderé placed in his room the Atropos mandragora which he had plucked; after having been some time in his room, with doors and windows closed, he became so weak and languid that the windows had to be opened wide and the plant removed. The odor of cantharides produces vertigo in those long exposed to it. Even the odor of roses will produce vertigo and nausea. Singers avoid lilacs or violets from experience of hoarseness and diminution of the purity and strength of the voice which they induce.

It has been well observed that the greatest mistake one can make in any undertaking is to despise the slight things relating to the matter in hand. So the physician, in taking a case should not ignore the effect of odors; they may be poisonous. They may predispose to disease; they may retard a cure. Attacks of real illness may be due to toxic substances from essential oils absorbed through the respiratory channels. Olfactory vertigo has been diagnosed by Joel; this is an illness superinduced by the abuse of artificial perfumes. It were well to forbid flowers in the sick-room; for these green plants may and should be substituted.

INEBRIETY.

THE intemperate use of alcoholic liquors certainly obtains very largely in the United States; much more so, no doubt, than on the Continent of Europe. There are several reasons for this difference. The Europeans drink beers and wines, which have comparatively small alcoholic percentage; a great deal of whiskey (of which nearly half is alcohol) is on the other hand drunk in America. No doubt also the highly nervous and overstrained American temperament is prone to seek stimulation. Unquestionably one peculiarly American factor in the evolution of intemperance is the treating habit. And Mr. Beverley Robinson has in a very cogent letter to the Boston Medical and Surgical Journal, suggested as one means of checking inebriety of making it "bad form" in clubs to treat to drinks. At first sight this seems an absurd suggestion; yet great reforms have been worked by means at first thought absurd. To create a club animus against treating would no doubt be a beneficent move in such organizations; but this would not have much influence elsewhere than in clubs, which are not in America a very pervasive institution. The habit of treating should be frowned upon wherever it obtains. This is, for example, done successfully in good regiments. Every man in the ranks goes "Dutch treat" on convivial occasions; and drunkenness is very rare indeed in such circumstances.

But it is among workingmen particularly that a spirit against the drinking habit should be fostered; it is the workingman who is here most harmed. There is here a duty for us physicians; and it is agreeable to note that those of us whose opinions are very weighty are beginning to combat the unlimited use of alcohol as a beverage. Dr. Charles L. Dana recently delivered an address in Philadelphia, in which he urged an educational propaganda against the use of alcohol by persons under thirty years. It is being agitated to form in this city a Board of Inebriety. Dr. Frederick Peterson lately addressed the students in Sanitary Science and Public Health at Columbia University on "The Prevention of Alcoholism and Insanity." The charitable societies exist to-day less to alleviate the ills of poverty than for their practical prevention. We should actively cooperate with them, not only with respect to the problem of alcohol, but every other problem that affects the health of the working people.

RETAINING A DOCTOR.

THERE is much wisdom (and just a little diversion) to be found in a letter addressed to our esteemed lay namesake by a citizen who would have physicians retained by the individual or the family just as business firms retain lawyers. Certainly this would be a good investment. This functionary would be called upon three or four times a year for examination and advice—nothing more, and the munificently-minded writer would (recognizing that a man's most precious possessions are health and the reasonable prospect of longevity) be perfectly willing to pay ten or twenty-five dollars a year for such examinations and advice. Here appears the diverting aspect of the situation; four examinations (with advice) in a year, at ten dollars; that is two and one-half dollars a seance. We fear this gentleman does not value his life very highly; this is not to be auto-complimentary, if we may coin that term.

Apart, however, from the writer's contemptible appraisal of a physician's work, his letter is full of sense. The method of waiting to go to a doctor until things go decidedly wrong is certainly worse than absurd. It were indeed better to have a skilled mechanic keep an eye on the machinery all the time than wait for a crash

to call upon him for his services. Almost all serious affections of the kidneys, the lungs or the digestive tract comes by degrees—often imperceptible. A timely examination will perhaps detect an imcipient nephritis or tuberculosis or possibly malignant growth—diseases which may be remedied if promptly coped with; many a nervous wreck might thus be forestalled.

In the good old days of the family doctor (that genius which seems to be becoming extinct as the dodo) the constitutions of patients were seen to in good time; and every indication of decay, every tendency to disease was promptly met and effectually dealt with. He was a most serviceable factor in civilization; many an evil he warded off; no need to send an earache to the aurist, a torn perineum to the gynecologist, an ingrown toe nail to the surgeon. He managed them all, *cito, tute et jucunde* — and inexpensively. Even the lay writer we here refer to would find his terms reasonable. Let the family practitioner, by all means, be restored; without him civilization were a failure, progress a fatuous dream.

THE WOMAN WORKER.

IN one of a series of articles on "The Women's Invasion," in *Everybody's Magazine,* appears the following: "The physical environment of the woman worker will become steadily better; her nervous environment is likely to become steadily worse. For physical environment the answer is simple — sanitary science." But "nerve strain cannot be regulated. It is a Gordian knot that cannot be untied; the only thing to do to it is to cut it; the only solution of it is a shortened workday; this is true for men as for women. Nerve strain affects men certainly, and it demands even in their case a progressive shortening workday as an alternative to a progressively shortened work life. But with women the case becomes infinitely more urgent, infinitely more tragic, in exact proportion as woman's nervous system is more unstable than man's and more easily shaken from its equilibrium."

A very pervasive — we had almost written, a predominant—aspect of our twentieth century civilization is here extremely well portrayed. There is among our women to-day an enormous amount of nervous tension —tension approaching dangerously near the snapping point. Surely this tension must soon be relieved if disaster to the community is to be averted. The nervous environment of women is indeed constantly becoming steadily worse; and this is making the sex hysterical beyond all bounds, and to the serious jeopardy of the social machinery. The vast majority of the weaker sex (so strong and influential by reason of its very weakness) have up to the present continued normal and steadily-minded enough. But the minority of women who are now combating vivisection, who would foist upon their sisters the duties of citizenship, who are for the introduction of women into all manner of business and professional life, who are, in short, for the masculinization of their sex, bid fair, we verily believe, to draw their more womanly sisters into a very maelstrom of social disintegration.

Take the woman in business, for example. The occasional noon-day visitor to the office districts in the lower part of Manhattan will be amazed to see from each skyscraper hundreds of young women employees going to lunch. Here is a situation in utter defiance of nature, in utter perversion of the sanest and most wholesome emotions. Instead of depriving, as she does, the responsible head of some family of his legitimate employment, every one of these young "business" women should be herself the sweet and joy-suffusing mistress of her own home. On the other hand, the observer, some three miles further uptown, shall find whole acres covered with only bachelor apartments (luxuriously appointed institutions) in which these selfish miscreants forget the duties and obligations which, if they were normal creatures, they would eagerly assume. It is a worse than sad state of things for the sexes to be thus determined to be antagonistic to each other, and to do each without the other. No wonder there is psychic chaos! *Cui bono,* in these circumstances; no one, indeed, except the specialist in psychiatry!

The contributors here quoted write of a Gordian knot which cannot be untied, but which can only be cut. A knot is not logically untied by being cut; nor is a situation solved by giving it up as hopeless. The only solution lies in the realization that the ways of the Eternal are stronger than those of humankind; sex vagaries are not going to change the cosmic processes. The primeval verities have to be submitted to; this is and has been, in all ages, the part of wisdom. Herein, indeed, does the normal individual find all the joy in life. What must womankind do, then, in the present circumstances, to work out her own salvation? A complete answer is given in the recent statement of a Japanese lady when asked her occupation; this she gave as "staying at home!"

The attention of our readers is especially asked to the important and scholarly article printed in other columns, from the pen of Prof. Prince A. Morrow, on "The Problem of Social Hygiene." Dr. Morrow, as is well known, is president of the Society for the Promotion of the Study of Social Hygiene, and is one of the highest authorities upon this subject. The members of our profession can do much to promote the efficiency of this work, and we feel sure that this article, written upon so high and practical a plane, cannot fail to interest them.

BIBLIOGRAPHICAL

The Human Species, Considered from the Standpoints of Comparative Anatomy, Physiology, Pathology and Bacteriology. By Ludwig Hopf. Authorized English Edition, with 216 illustrations and seven plates. Octavo, pp. 457. Price, $3. Longmans, Green & Co. London and New York. 1909.

The aim of this book is the comparison of the essential characteristics of man with those of the lower animals in the light of the results of recent research.

Not only are facts and details discussed, but such subjects as psychology, the origin of the mind, emotions and their expression, social customs, marriage, communism, modesty, shame, religion and art are also considered in the interest of the general reader.

The text will be found to contain a fund of information, presented in an interesting though concise manner.

The Surgery of the Ear. By Samuel J. Kopetzky, M.D., Attending Otologist, New York City Children's Hospitals and Schools, Etc., Etc. With 63 half-tone and line drawings, eight charts and four colored plates. New York. Rebman Co.

This book is not a desk treatise; but a practical work evolved out of a considerable experience. It will meet excellently well the needs of those who would enter upon the difficult and hazardous field of aural surgery. Well-nigh all the profession's extensive literature up to the date of publication is here epitomized, as is evidenced by a very extensive bibliography. The chief value of the book lies, however, in the description of procedures which Kopetzky has fully and ably tested. The illustrations are admirable; they really illustrate the text. The plates are superb.

Marriage and Disease. An abridged edition of health and disease in relation to marriage and the married state. Edited by Prof. H. Senator and Dr. S. Kaminer. Trans. J. Dulberg, M.D. New York. Paul. B. Hoeber.

It is essential that a work with such a title as this should not be meretricious nor addressed to the prurient mind. The names of such contributors as Senator, Kaminer, Eulenberg, Ewald, Hofer, Kraus, Blumreich, v. Leyden, Neisser, Orth, Paczek, Posner, Richter and Wolff assure that the design of this work is directly the opposite of any such purpose. The subject is indeed considered in the loftiest—a really superb spirit. Nor can there be any doubt of the need of such a book written in such tenor. The original large manual was prepared as a text-book for medical men only; but it was evident to reviewers that an abbreviated edition, intelligible to the ordinary reader, would be of the greatest benefit. Here the man or woman who contemplates or has entered the married state shall find set forth decently, without sensationalism and in well-reasoned, non-technical language, knowledge essential to the prevention of the dreadful evils which follow upon ill-assorted or ill-conducted marriages. The object of this book—an essentially beneficent one—is not to make a consultation with the doctor unnecessary; but, on the contrary, to show how such a consultation is of the greatest moment under circumstances which are often considered by the lay mind unworthy attention. The range of subjects is the widest imaginable; and the practitioner will himself find it most informing and useful in his family work.

Sanitation and Sanitary Engineering. By Wm. Paul Gerhard, C.E., Consulting Engineer for Hydraulic and Sanitary Work; Member of American Public Health Association; Corresponding Member of American Institute of Architects; Member American Society Mechanical Engineers, etc. Second Revised and Enlarged Edition of Sanitary Engineering. 12mo. pp. 175. Price, $1.50. New York: Published by the Author, 33 Union Square. 1909.

In this revised edition the contents have been enlarged by additional matter to over twice the original size. The first edition received warm praise from technical journals as well as from papers devoted to civic improvements and municipal problems. The book gives "a mass of information which non-technical municipal officers will find valuable" and "a good outline of the field of sanitary engineering." It discusses the special training and the studies required by a thoroughly educated sanitary engineer. The new edition brings a description of the courses in sanitary engineering at the Massachusetts Institute of Technology, at Cornell University, University of Pennsylvania and at Columbia University. It will be found valuable to engineers, architects, health officers, sanitary inspectors and army officers.

Leaders in Respiratory Organs. By E. B. Nash, M. D., author of "Leaders in Homœopathic Therapeutics," "Leaders in Typhoid," "Leaders in Sulphur" and "How to Take the Case." 188 pages. Cloth, $1.50. Postage 8 cents. Philadelphia. Boericke & Tafel. 1909.

This little book it intended for those who prescribe according to Hahnemann's plan, and it will be found useful to such.

A Guide to the Twelve Tissue Remedies of Biochemistry. The Cell-salts, Biochemic or Schuessler Remedies. By E. P. Anshutz, 91 pages. Cloth, 75 cents. Postage, 5 cents. Philadelphia: Boericke & Tafel. 1909.

This book is an orderly and convenient arrangement of the experience with these remedies, for the use of the practitioner.

CORRESPONDENCE

A CAUTION AS TO TUBERCULOSIS LEGISLATION.

To the Editor of the MEDICAL TIMES:

We are heartily in sympathy with the comparatively recent agitation to secure efficient treatment for tuberculous patients and, incidentally, to limit the foci of infection. Indeed, we would emphasize the fact that the incidental purpose is, ultimately of greater importance to the race and we would even go so far as to support a general movement to segregate compulsorily all patients who are discharging tubercle bacilli, with the avowed object of eradicating the disease. Considering the rather feeble viability of the bacillus, the probably human origin of the great majority of cases, and the fact that the infection is practically limited to man, cattle and domestic pets, we are optimistic enough to believe that such an endeavor would meet with success within a comparatively short term of years. We are encouraged in this belief by the historic fact that a closely analogous infection, leprosy, was stamped out of northwestern Europe by similar means, practiced in

an extremely crude way when our forefathers were only semi-civilized.

Under eixsting conditions, however, we are inclined to think that certain agitators have gone too far. First of all, the expense of dealing with the problem on the scale contemplated by them, is enormous. We know that ample statistics are offered as to the greater expense of disability and curtailment of life. But we question seriously whether the statistics are correct. While very far from holding the extreme view that tuberculosis is a scavenger of the worthless portion of the race, we believe that the average value to the community of the tuberculous portion of the population is very much less than has been estimated, especially when we consider that, on the whole, those predisposed are shortlived and delicate, without regard to this particular disease. Moreover, even the successful combatting of tuberculosis, implies a period of a year or so of complete support and a diminished value to the community for a much longer time.

Thus we hold that the economic plea should be abandoned and that the appeal for state aid should be based squarely on grounds of humanity.

Even so, it seems to us that the magnitude of the scheme of many of the agitators is far beyond the actual needs. The number of tuberculous deaths annually may be stated approximately as one-tenth of the total death rate or as somewhat less than one-five-hundredth of the total population. It has been publicly stated that the incidence of the disease is five times the death rate. As approximately three-quarters of cases of recognizable tuberculosis die and as many cases die within a few months and those of consumption embracing about 85 per cent. of all cases of fatal tuberculosis seldom live more than two years, this coefficient (5) seems altogether too high.

However, it is probably a conservative estimate that about one-half of 1 per cent. of the population of the State has some form of tuberculosis, nearly 90 per cent. of all severe cases being pulmonary.

To maintain, as some appear to do, that the State should furnish special sanatoriums or hospitals for a population of 40,000 or more, seems to us unreasonable. If the proposition were to segregate the tuberculous simply or mainly to protect the non-tuberculous and without regard to the wishes or especially the welfare of the patients, the State would undoubtedly have to do this. But, from the present standpoint, the duty of the people is merely to provide adequate care for the indigent sick, as in the case of other diseases.

A very practical point is that for advanced cases it is by no means necessary that the hospital should be specially built or labeled. Such cases can be kept comfortable and can be prevented from becoming sources of further infection in a ward of suitable size in any ordinarily well built and equipped hospital. Whether the State or the county or city should provide the necessary funds is not a vital matter, neither is the question as to whether such patients are kept at one hospital or several. When public lecturers tell us that patients with advanced phthisis are kept in dark bedrooms under conditions of the direst poverty, so that not only the present patients suffer but other members of their families become infected, and ascribe this state of affairs to lack of hospital facilities, we are forced to question the accuracy of the statement.

There is no question but that less advanced patients may often be saved by suitable care, whose most important items are fresh air and good food, nor that such care should be furnished to those who are too poor to obtain it by private means. But it is going altogether too far to claim that every such person should be sent to an ideal sanitarium in the Adirondacks at State expense. It is impossible to state just what proportion of the tuberculous are properly dependent upon public charity. It seems a safe statement that fully half are females, and that more than half, irrespective of sex, are either children or adolescents or very young adults who have not passed the age at which they might properly expect support from older members of their family, in view of their disability.

It has been abundantly proved that the essentials in the treatment and prophylaxis of tuberculosis can be secured at comparatively small cost and in any reasonably good climate, even in cities except in overcrowded portions. Unfortunately, the last qualification applies to about half of the entire population of the State, in the metropolis.

We need not argue that, whatever the source of support, there must be a very practical distinction between incipient cases without discharge of tuberculous matter and those with expectoration or other discharge. But the necessity of such a division of cases involves a problem of considerable difficulty.

Suppose that the State, in acquiescence with the demand now being made, establishes "adequate" Adirondack sanitaria where persons with incipient phthisis can go without danger of infection from other patients. Is it not likely that a host of lazy young adults will try to take advantage of a free mountain hotel, with agreeable social life and the attractions of the landscape? And, in view of the absence of positive bacterial findings or reactions in early cases, and the rather vague nature of the symptoms and signs on which the diagnosis rests, how will it be possible to make the necessary distinction? Personally, we are inclined to doubt whether the numerous cases of cured "incipient phthisis" have all suffered from a genuine infection. It is easy to be dogmatic and to lay down diagnostic schedules, but in no such case can we regard the diagnosis as absolutely established.

We do not wish to be understood as belittling the importance of the tuberculosis problem or as opposing suitable legislation for prophylaxis along either educational, sanitary or hygienic lines, or for care of those in need of aid from the community. But we believe that, with the best intentions, a number of enthusiasts are taking advantage of a properly aroused public sentiment, to introduce a form of paternal aid by the State which will not only greatly increase taxation but which may prove an entering wedge for various manifestations of socialism.

A. L. BENEDICT, A. M., M. D.

Buffalo, N. Y., Jan. 25, 1909.

MALARIA AND THE MOSQUITO.

To the Editor of the MEDICAL TIMES:

In the March number, page 90 ("Retrospective"), Ross is made to say that man contracts malaria only by the bites of mosquitos. Has he not jumped at his conclusions and stated them as facts? It seems so to me. In the first place, if man only gets malaria from the mosquito and the mosquito gets it from man, how and when did it originate? In the mosquito or man?

Surgeon H. T. Parke, the comrade of Stanley in his last expedition across Africa, said: "My own sharpest febrile attack followed a ducking while trying to cross a tributary of the Congo river. Every time I got a wetting in equitorial Africa I suffered a seizure of intermittent fever. It mattered not whether the water was river, swamp, or from showers. All the Europeans suffered in the same way; even the donkeys were similarly affected, and it returned with monotonous regularity. The same symptoms appeared after exposure to a chilly breeze during or after active perspiration. Exposure to the hot sun produced the fever provided the head and spine were not sufficiently protected." He said: "We are still far from having arrived at any degree of certainty regarding the relation sustained by the micro-organisms that have been discovered in the blood, why it is that two hours passed in exposure such as above should produce such a train of symptoms alike in man and beast, is as yet an unsolved bacteriological problem, and until this is accomplished, we must look for other causes." It, in this case, seems that the head and spine, minus the mosquito, is another port of entry for the intermittent poison: the sun being the cause, the fever the effect. To me this has more the appearance of a neurotic than a microbic cause.

My father came to this place from Boston, Mass., 67 years ago when malaria, in its season, was so thick that you could cut it with a knife. Every year about the first of September it became epidemic, every member in most families being afflicted every other day. Now if the mosquito was the cause why did this condition not happen in July and August? Why was it worse here and in the Pontine marshes after the trees and shrubs had prepared their buds for the vernal opening? In the congestive form, unless the next day's chill was broken, as a rule, the patient died.

When it assumed an epidemic form, was this due to an increased crop of mosquitos? Was the congestive form due to the mosquito or the man?

In 1865 I went East on a visit and although I had lived here 23 years and was the only member of the family who never had a chill, in just a week after my arrival in Boston I had a genuine Illinois shake. The next day, the 27th of September, I had another attack and the wife of the relative where I was visiting, having never seen a case of the fever, was curious to witness the effect of the cold stage. She could see how one might feel chilly, but in her opinion the *shake* part of it could be controlled and was unnecessary. In a week after this she had what I called "dumb chills," but was assured that I was mistaken, for they never had the disease in Boston. In three days (10th day) she found from sad experience that the "*shake part*" was not put on, for she had a genuine chill of the shake order. Now there was not a mosquito there, and if one had bitten me, according to Ross, it requires from six to eight days for the parasite to develop in its stomach, and as these in both cases were the "plasmodium praecox, of aestivo autumnal" kind, it would require ten to twelve days after the innoculation for it to develop the fever in the human host, or eighteen days, whereas in this case it took but seven, and must have been due to atmospheric contagion, as the mosquito could not have been the intermediate host. Both cases were the quotidian type.

A fews years ago I was called to attend a case of intermittent fever brought here from the swamps of Arkansas. This patient slept in a room occupied by two others, and complained about the mosquitos being at night so bad that he could not rest well. Neither of his room-mates contracted the disease, though they had it years before, and were not as some seem to be, immuned.

With all the former lakes and ponds turned into cultivated fields, the virgin soil all broken, the disease has almost disappeared; the few isolated cases remain so, as the mosquito (?) unlike in former years, fails to get its *innoculated* lance at work, though using his other one with all its former energy and *bloody* hunger. As I am now 72 I may be an old fogy, having no faith in this new malarial propagating fad.

AMOS SAWYER, M.D.

Hillsboro, Ill.

ASYSTOLE IN CHILDREN.

To the Editor of the MEDICAL TIMES:

Sir:—In your issue for April, page 128, there is a paragraph on "Asystole in Children," demonstrating what nonsense is produced when we pay no attention to correctness of medical names. In the paragraph—a quotation from a French journal—is spoken of asystole in children and in adults, and some means of relief from this affection. In reality children as well as adults with asystole are stone dead, there is no relief when the heart has ceased to contract. As I have mentioned in my book, "Medical Greek," instead of asystole it should have read dyssystole. A. ROSE.

126 E. 34th Street, New York.

April 6, 1909.

Value of Mercury in Non-Syphilitic Affections of the Eye.—Philippe Angeli (Journal des Praticiens January 18, 1908) gives these:

1. Sympathetic ophthalmia. According to Dr. Valude (Bulletin Médical, 1907), who views the danger of this occurrence as obviable, mercury offers our best treatment.

2. Non-syphilitic iritis. This inflammation may be due to gonorrhea, or to some endogenous toxin. Local measures, such as hot compresses and atropin, must be used. Post-operative iritis is often reduced by mercury.

3. Exudative or atrophic choroditis, macular or disseminated, especially in exudative choroditis, mercury exercises a magical effect. Intravenous injections of cyanide of mercury, about 20 of them completely cleared up a severe macular inflammation in one case recently seen.

4. Myopic choroditis may be relieved by mercury.

Baccelli has shown what an intense leucocytosis may be brought about by small repeated doses of mercury. To this, in large measure, we may attribute recovery.

RETROSPECTIVE

Calomel.—Prejudice not infrequently awakes at the mention of this time-honored drug, and the practitioner is told that he "must not order calomel." It is not very long ago that patients were dosed with mercury until salivated, very much in the degree in which we administer quinine and the salicylates "to cinchonism."

But calomel has a legitimate use. Those who employ it with common sense find it one, if not the one, of all mercurials to be chosen for eliminative purposes. There are four chief questions to answer:

1. What size dose?
2. How often repeated?
3. Alone, or with what adjuvants?
4. How to eliminate it?

There are, also, the questions of its action under these conditions, for calomel is nearly "all things to all men."

1. It is a laxative, increasing the flow of bile. This excites pancreatic secretion.

2. It is an eliminative agent, by intestinal, renal, and dermal stimulation.

3. It is a local antiseptic, as on superficial structures, and within the body.

4. It is an alterative. It acts upon the neoplastic and degenerating formations of secondary syphilis characteristically.

5. It is a revulsant, as in cases of cerebral or spinal concussion it affords a means for exciting reaction.

6. It is a sialogogue in toxic doses. It stimulates epithelial and glandular tissue.

7. It acts upon bone, nerve and mucous membranes in doses continued over some period of time.

8. It is effective in febrile states by its release of the overtaxed emunctories.

9. It is valuable in states of congestion affecting mucous membranes, or glandular tissue.

10. Calomel is better than other mercurals in patients at either extreme of age.

11. In cases of toxemia it is important as combating local and general depression and secretory inhibition.

12. Calomel yields to the bichlorid for hypodermic administration. It is valuable for insufflation, but the ointment mercurializes swifter. Colloidal mercury is best for intramuscular injection. The yellow or red oxide of mercury, in ointment, is best for ophthalmic practice. The biniodid is best in late syphilitic cases.

13. Lemon juice or acids generally are contraindicated during or at administration of calomel, for the active poison of the bichlorid may be formed within the patient.

14. Give calomel in powder form. Pills or tablets are frequently slow or inefficient.

15. Do not exhibit calomel while the patient is taking an iodid, or a morfin, or an astringent preparation.

First of all, if we are to use calomel as a purge, we ought to know why.

In catarrh or simple inhibition of bile secretion, as in la grippe, pneumonia, biliousness, rheumatism, lithiasis, or cirrhosis, we may give calomel in divided doses aggregating from one to two grains, or from 5 to 15 centigrams. A fractional dose is taken every hour or half hour. Calomel requires from ten to twenty hours to operate effectually. Its action is accelerated and the elimination of the mercury effected by doses of salines, such as citrate of magnesia, phosphate of soda, or sulphate of magnesia. Both the calomel and the sulphate of magnesia have antiseptic properties, and the latter has also an analgesic action. This is noticeable in cases of intestinal auto-intoxication.

If we are in haste, two doses of 5 centigrams of calomel an hour or two apart may be ordered.

After a second interval, a saline may be ordered in one dose or in fractional doses:

℞ Hydrarg. chloridi mitis ..... 0.1 gram.
Sacchar. lactis ..... 0.2 gram.
M. Ft. Chartul. no. ij.
Sig. One at once. The second in two hours.

And,

℞ Magnesii sulfat 30.00
Tr. opii. deodorat. gtt. ii.
Syr. limonis 30.00
Glycerin 5.00
Aquæ, q. s. ad. 100.00
M. Sig. One tablespoonful every hour, taken in plenty of cool water.

The action of divided doses of calomel, especially when given in febrile cases, may be assisted by adding minute quantities of acetanilid.

Powdered ipecac increases the efficiency of calomel if the liver is inactive. While enonymus, leptandrin and podophyllin are excellent remedies in chronic ailments, of the pancreas and liver, podophyllin and ipecac are useful in the treatment of acute congestion or stasis of these organs.

Salol is valuable in addition to calomel if uric acid or conditions encouraging lithiasis are suspected:

℞ Hydrarg. chlorid. mitis..... 0.10 gram.
Salol ..... 0.25 gram.
Acetanilid ..... 0.25 gram.
Pulv. ipecac ..... 0.05 gram.
Sacchar. lactis ..... 1.00 gram.
M. Ft. Chartul. no. xij.
Signa. One every half hour, and follow with citrate of magnesia.

In the preceding, the quantities of salol and acetanilid may be made less. Indeed, one decigram, or five centigrams, of each, would act very favorably as adjuvants to the calomel.

The oil of wintergreen, used as a flavor, may assist the biliary action of the main cholagogue.

Another good way to secure the action of calomel is to order fractional doses in the afternoon and evening, and the saline taken early the next day. Or a dose of five to fifteen centigrams taken at bedtime and the drink of Hunyadi Janos, Pluto Water, or citrate of magnesia, in the morning.

The acetanilid given with calomel seems to exercise a mollifying action entirely aside from any influence upon febrile states coinciding. In giving calomel to children very small amounts of acetanilid, even a total of no more than one or two centigrams in the dozen powders, acts very beneficially, very probably increasing and accelerating the absorption of the mercurial.

Sodium glycocholate may be given after calomel, to maintain and increase the biliary movement. This physiologic treatment may be reinforced by suitable aperients and drinking freely of good table waters. Physostigmin in pill with or without atropin, to increase peristalsis, is available. Dietary suggestions assist the patient. Stewed fruit, and fresh green vegetables are to be encouraged.

The interesting point to observe is the ready response a patient gives to calomel, if in the combination we in-

clude some minute dose of salol, acetanilid, ipecac or other therapeutic agent chosen because of temperamental characteristics. The liver in its function is closely wound up in our fundamental personality.

Inheriting from the primitive tissues of the fetus and embryo what it does, while other derivatives from the same tissues develop in one direction or another, in the liver these basic elements come to full bloom and create a vital center whose influence is the heart of metabolism. It regulates the nature of the blood stream upon which depends the action of blood vessels and heart itself.

Massive doses of calomel are indicated to produce diuresis and in hepatic as well as renal dropsy. Years ago it was a frequent thing to push calomel until the patient became salivated. We can safely give one dose of 25, 50, or 75 centigrams.

Certain conditions ought to be held in mind when calomel is given. Diseases of the liver and pancreas, and general conditions such as lithiasis, may underlie the acute illness which called us to the case. Recurring bilious attacks, with or without vomiting, and with or without icterus, may lead us to suspect catarrh of the biliary and pancreatic ducts, and the possibility of gall stone. Cholecystitis is also a possibility. Obscure changes in nutrition may be due to pancreatic insufficiency. The dejecta should be carefully watched.

Olive oil is an excellent remedy, if gall stone is suspected. It may loosen many of them, and in so far clear the diagnosis. Do not give the oil until a saline has followed the calomel. Then give large doses. Addition of a pinch of table salt to the olive oil will assist patients to take larger amounts with less repugnance. Many patients enjoy olive oil, if they can obtain a pure product. Sometimes patients learn to enjoy meat cooked with oil instead of butter.

External treatment, such as applications of iodin, may be ordered.

The use of hot, wet woolen bandages around the abdomen and thorax, over the liver, stomach, spleen and pancreas, renewed, and so maintaining an equable moist heat, encourage equalization of the blood lymph circulation. Around this hot, wet binder another dry one may be wrapped. This will materially increase the even temperature, prevent chilling of the patient, and keep the bedding dry. This treatment in congestion of the liver may be given after the exhibition of calomel and saline. The diaphoretic action of the binder may not be advisable while mercury is first given. But after the liver has been acted upon by the mercurial, diaphoresis will relieve any surrounding congestion without altering the course of the secretion of that organ.

After the flow of bile is started some regular treatment, such as with euonymus, leptandrin, podophyllin and gentian will act well. We may order:

℞ Podophyllin ..... 0.25 gram.
Ext. euonymi ..... 0.25 gram.
Ext. gentian ..... 0.25 gram.
M. Ft. Mass. div. in pil. no. xvj.
Signa: One after dinner.

This pill may be given at bedtime, instead. Or it may be given three times a day (after meals).

The formula may vary:

℞ Aloin ..... 0.10 gram.
Podophyllin ..... 0.25 gram.
Leptandrin ..... 0.25 gram.
M. Ft. Mass. div. in pil. no. xvj.
Signa: One or two at bedtime.

Then in the morning the use of some good effervescent preparation of phosphate of sodium. This should be kept up for sufficient time to produce a systemic reaction.

After severe trauma, especially such as blows injuring the head or spine of children, the exhibition of hydrargyrum chloridum mite is very valuable. And a mild saline, such as the milk of magnesia, the calcined magnesia, or even very weak solutions of Epsom salt, should follow.

In adults a single dose of 10 to 15 centigrams of calomel, after a severe injury, is advisable. The saline follows, on the next day.

In syphilitic cases, doses of 25 milligrams of hydrargyrum chloridum mite, after each meal, may be used during the earlier stages. After the diagnosis is made these doses of calomel may be pushed to salivation. When the secondaries appear, if they do, the employment of calomel is good. It may be vaporized in a bath cabinet. Of course, never use a mercurial until the diagnosis is made.

Syphilitic condylomas are well treated by pure calomel powder applied locally. Inunctions of mercury, in the form of blue ointment, may be begun. Or deep, intramuscular injections of colloidal mercury are very successful.

After all is said, ptyalism is quickest effected by small frequent doses of calomel. The taste of metal, and the reaction in the gingival tissue, implies the presence of mercury, and the general reaction of the body to the metal. The exact significance of the reaction may be more than we can explain. The heavy breath of fever patients, uric acid sufferers, and patients who are bilious seems to point to the mouth as an area of excess secretion, when the skin is overpowered, and the kidneys and intestines unable to increase their activity. When mercury has filled the body to the extent that it is excreted in the mucosa of the mouth, it is probably able to attack the syphilitic virus, or protect the tissues of the body from attack. The peculiar changes in syphilis are irritative, neoplastic, and indicative of a stimulus to abnormal cell reproduction. The employment of such a heavy metal as gold, or mercury, may act in ionizing these diseased tissues. This brings up medicamental ionization, as recently described by G. Betton Massey, of Philadelphia. In the future it may come about that the disorders of syphilis will yield to this direct therapy, as arthritic and neoplastic conditions now appear to do.

Pyle, of Philadelphia, has recommended a dusting powder of calomel in certain affections of the conjunctiva, phlyctenular disease, for example.

Pelvic congestion should be treated by attention to all the branches of the portal vein, and any hepatic congestion. Free saline purging may be employed. But the use of calomel may exert very happy effects.

Avoid tablets of calomel, unless they dissolve with readiness. A powder is most effectual.

Why children tolerate large doses of calomel is not impossible to understand. They have a considerable degree of cell reproductivity, and it is upon this function, or upon conditions which determine it, that mercury is operative. So it may prove, conversely, that opium is less well borne because opium delays the functions of the body and decreases elimination, while the cell reproduction and vigor of the childish tissue demands outlet, and the free operation of secretions and

excretions.

The sore throat of diphtheria, or tonsillitis simplex, is well treated by powders containing divided doses of calomel, especially when the case is in a child. This should be followed by a solution of chlorate of potassium.

Calomel is not well borne by people who suffer from tartar around the necks of the teeth. People having Rigg's disease need to have any mercurial given with caution, especially if the patient is of sallow or rheumatic temperament.

The Use of Digitalin in Chronic Heart Disease.—French authorities, notably Huchard, favor digitalin in its crystaline form as the best form of all the digitalis series. Amorphous digitalin has quite an extended employment, and is commonly put at the head of lists issued by drug companies. This seems to give the double information that it is often ordered, and that it catches the eye first. Crystalline digitalin is listed, and a warning added that its use must be guarded.

How, then, are we to guard its use? From the French, who use it much and well, we find that the patient must be put to bed a day or so beforehand. There is a need of laxatives and diaphoretics.

Having tranquilized the patient and secured elimination, doses of one-half milligram, or better one-fifth of a milligram, every six hours, may initiate treatment.

The condition of pulse rate, its character, and the state of blood pressure noted during treatment is valuable. Slowing of the pulse with strengthening of systole, accentuating the force of the heart's action, and lengthening of diastole, resting the muscle, and raising blood pressure, increasing the outflow of fluid from the entire vascular system, diuresis and osmosis generally, these are consequent to digitalin.

Gradually reduce the amount of each dose. In the skilful management of dosage lies much of the chances of our success. Do not reduce the digitalin until the quantity of urine per diem is increased.

The clinician will always measure the total urine per twenty-four hours. Qualitative tests for albumen and sugar ought to be supplemented by a determination of urea and the actual and corrected specific gravity.

All of this means a good deal of attention. The precision arrived at will compensate us. But the question of expense of time and effort, and the proper remuneration often looms large in the way of the general practitioner.

After digitalizing the patient and having reached a moderate and then a low dosage, the French authorities advise a minimum dose carried over some considerable period.

Americans have shown that distilled water exercises a genuine diuretic action. The exhibition of diluents, and, in general, plenty of fluid, is thought advantageous. The amount of waste excreted will irritate the epithelium of the uriniferous tabules. So we should dilute the fluid excreted. However, to increase the blood pressure by too great amounts of fluid taken at one time, is also to be guarded against. Sphygmograph, urinometer, liter measure, and blood pressure apparatus, these are to help us.

Recent papers condemn combinations of digitalin and potassium nitrite. Given with the wish to relieve the stress upon the heart, our very purpose is defeated. Reduction of blood pressure by the nitrites causes a greater demand for digitalin. And reduction, any way, is preventive of the conditions favoring outflow from the vascular tissues.

The Nitrites in Our Daily Practice.—Aside from especial conditions in which nitro-glycerin or potassium nitrite may be indicated, there is a wide field of application in such diseases as la grippe, bronchitis, acute coughs, and in paresthesias, headache, vertigo, or acute infections.

The nitrites are indicated: 1. Steady users of alcohol (as beer drinkers), when some stage of arteriosclerosis exists along with acute infections, such as la grippe or acute bronchial catarrh. 2. Patients with vaso-motor spasm and some elevation of arterial tension. The aortic leaflets close with a modified sound, as described by Huchard, a clangorous or ringing accentuation of the aortic second. 3. Headache of arterio-sclerosis. 4. Vertigo or dizziness in aged patients with increased blood pressure. . Infectious diseases accompanied by elevated blood pressure, headache, vertigo or mental reaction—melancholy, poor memory, or arteriosclerosis and resulting psychosis. 6. To assist in the absorption of drugs, such as salol, quinine and the salicylates. 7. For insomnia of arteriosclerosis. Given with bromides or anti-spasmodics, such as valerian or sumbul. 8. In Graves' disease, with use of bromides and hypochloridization. The writer has had remarkable success by this treatment. The use of salt is allowed while bromide is taken, then neither sodium chloride nor the bromide of strontium is given for a two weeks' interval. The use of nitrites in exophthalmic goiter is evidently more interesting in view of the relation of the theory of the internal secretion of the posterior lobe of the pituitary body, and the thyroid in Graves' disease. 9. Nitrites are concerned with metabolic alterations of the lymph-vascular system rather than with the sensory or motor functions of it, or the nervous units of it. In diseases of trophic nature, or of the sympathetic, in secondary conditions, as of equalizing character, the nitrites are important. Not affecting secreto-motor or excreto-motor units, but influencing the ways of absorption and osmosis and states of aggregation of tissue masses and units, here we have a true idea of the range of application of the nitrites.

Called in to treat, say a man of fifty, a constant drinker of beer, who has some arterial degeneration, and is suffering from influenza, temperature 102 degrees, cough, headache and prostration, we order:

℞ Salol.	1.50	gm.
Hydrarg. chlorid mitis.	1.10	"
Potass. nitrit	0.02	"
Acetanilid	1.00	"
Pepsin	1.00	"
Carbon lignis	0.50	"

M. Pone in capsul no. xvj.

Sig. One each hour.

On the next visit we will find some reduction of fever and lowered blood pressure, and we order:

℞ Salol.	2.00	gm.
Strychnin nitrat	0.01	"
Potass. nitrit.	0.02	"

Pepsin ..... 1.00 "
Carbon lignis ..... 0.50 "
M. Pone in capsul, no. xij.
Sig. One every two hours.

Many cases of obscure headache in the aged and who have some hardening of the arterial walls we relieve by:

℞ Potas. nitrit..... ..... 0.03 gm.
Ext. valerian..... ..... 0.50 "
Ext. gentian .... 0.50 "
M. ft. mass div. in pil no. xij.
Sig. One every 3 hours.

Many cases of acute bronchial catarrh, with or without elevation of temperature, occurring in the aged and the arteriosclerotic, need this:

℞ Potass. nitrit..... ..... 0.03 gm.
Bals. peru ..... 1.00 "
Ext. valerian ..... 0.50 "
M. ft. mass div. in pil. no. xvj.
Sig. One every 3 hours.
A cough mixture may alternate.

Patients whose condition shows some disorder of cerebral circulation, headache, vertigo, tremor or dizziness may require a reduced amount of fluids in their diet, some diaphuresis and the exhibition of potassium nitrite or nitroglycerin.

In cases of chill and fever with higher arterial tension, we may advantageously combine small repeated doses of the nitrites with other treatment:

℞ Quinin hydrochlorat ..... 2.00 gm.
Potass. nitrit ..... 0.02 "
Bals. peru ..... 1.00 "
M. Pone in capsul no. xvj.
Sig. One every 2 hours.
Or:

℞ Sodii salicylat ..... 2.00 gm.
Potass. nitrit ..... 0.02 "
Strychnin nitrat ..... 0.01 "
Carbon lignis ..... 1.00 "
M. Pone in capsul no. xvj.
Sig. One every 2 or 3 hours.

A type of person, yellowish skin, rather spare, and quick of word and action, yellowish conjunctiva, poor teeth, coated tongue, arteries of temples tortuous and visible in pulsations, tendency to baldness, slight osseous structure, sluggish or slow pulse, rather full and of increased tension, constipated, variable appetite, suffering from migraine at intervals and of rather stereotyped mentality, is one to whom potassium nitrite should be given whenever his condition becomes burdened with insufficiency of the emunctories, coughs, chill, fever or infection. His tissues are not permeable, and the nitrite is indicated. In conjunction, but separately, administer some dilute nitric and chlorhydric acids.

At this point the clinician arouses himself to look at the cross-roads. He sees that sulfur is a remedy par excellence for epithelial tissue such as the skin, and sulfuric acid acting upon excessive diaphoresis to restrain it.

Nitric acid acts upon epithelial elements in the metabolic tissues, stimulating the liver. The nitrites promote osmosis and act upon the permeability of connective tissue. The solubility of excretions is encouraged. Chlorides have to do with the digestion of fats and proteids, and the tension of metabolism is relieved at the various stages of assimilation, to the point in which the blood plasma is reached, which also must be saline. Bromides relieve and relax nervous energies. Hydrobromic acid acts as an astringent, and delays discharges of nervous force. All acids are therefore useful in states of tension. While alkalies, per contra, stimulate and irritate. Hydriodic acid acts upon the sympathetic nervous system, and upon the trophic centers. The iodides are resolvents of tissue, especially liberating connective tissue from the products of retrogression and relieving tension of degenerating pressure. Iodides are structural alteratives, and nitrites functional alteratives, consequently. The action of nitrites is upon tissue as a mass of units, influencing allocentric metabolism or the nutrition of the parenchyma, while iodides affect the cell structure and the idiocentric nutrition or nutrition of the cell substance in and for itself.

Without going further into this fascinating field, we may conclude that the nitrites are especially valuable in combination. Osler places a knowledge of the action of the nitrites as one of twelve therapeutic fundamentals. The practitioner will rejoice in having the potencies of this group at his command.

The Common Cold.—R. W. Allen (Lancet, Dec. 5, 1908), finds at least five organisms capable of producing an attack of acute nasal catarrh: the B. influenzae; the B. septus; the B. of Friedlander; the micrococcus catarrhalis; and the micrococcus paratetragenus. These may be present in the vasopharyngeal space in a certain percentage of cases exhibiting no pathological features; increase of virulence and lowered resistance may then light them into activity. In other cases the infection is from without. Each organism produces its own type of cold and a differential diagnosis of the organism is possible from a consideration of the clinical features; this is naturally more difficult should the infection be a multiple one. This differential diagnosis is of great value both in prognosis and in treatment. Chronic nasal catarrh is probably always due to infection by the bacillus of Friedlander, unless the Eustachian tube and middle ear be involved by the micrococcus catarrhalis; chronic tracheal catarrh to infection by this latter germ or the m. paratetragenus, to which secondary infection by staphylo-, strepto- and pneumococci and other pathogenic germs may be superadded. For infection, local opsonic defect, and for cure, increase of opsonin are probably necessary conditions. By means of the injection of the corresponding bacterial vaccines an attack of acute cold due to any given organism or organisms can be considerably shortened, and complications may be prevented. In like manner chronic affections may be cured. By injections of the vaccines of the several organisms in appropriate doses and at right intervals much (if not complete) immunity against future attacks of acute cold may be secured. In the very susceptible the best procedure is probably systematic immunization every four to six months against all the "cold" organisms and especially against the particular organism or organisms responsible for the appearance of subsequent epidemics against which protection is desired.

The Differential Cutaneous Reaction of Detre.—L. Detre (J. A. M. A., Oct. 17, 1908), has devised a modification of the von Pirquet skin procedure for diag-

nosing tuberculosis; Detre applies three different substances at the same time: (a) concentrated old tuberculin; (b) filtrate of a culture of human tubercle bacilli; and (c) filtrate of a bovine culture. The reaction to human or bovine toxin should be determined under the following conditions: (a) To confirm a difficult diagnosis and answer certain hygienic questions in regard to infection carriers and the mode of infection (inhalation or ingestion). (b) In the study of the question of the dualism of the tubercle bacillus; cattle react more vigorously to bovine than to human filtrates. (c) To answer the question regarding the origin or type of the bacillus or tuberculins (or filtrates) which can be done in from 24 to 48 hours by selecting the test individual according to his reaction to human or bovine tuberculin. (d) When it is desired to immunize a patient for therapeutic purposes, to the toxins of both types of bacillus. Most tuberculous individuals can readily be immunized with the concomitant toxin and are intolerant to the dominant filtrate; hence the therapeutist will select the substance to be employed by the cutaneous picture and thereby avoid the unpleasant after-effects which sometimes follow the use of the unsuitable toxins. The concomitant filtrate produces immunity to the toxin, while the dominant produces intolerance. By means of the systematic employment of the differential cutaneous reaction a patient can be immunized against the toxin, provided of course that the clinical symptoms are kept under accurate observation, with much greater ease and certainty than has heretofore been possible. The technique is simpler, the results are objective, more certain and more easily perceived than the results of the opsonic method. The differential cutaneous reaction is recommended to other investigators who wish to gain insight into the pathologic conditions of tuberculous patients, and who endeavor to influence the tuberculous process by immunization methods.

Paratyphoid Fever (J. A. Roddy, J. A. M. A., Feb. 6, 1909), is a distinct disease, to be differentiated from typhoid, being due to an infection by a bacillus other than the typhoid bacillus. The onset is more sudden, the duration shorter and the disease milder; hyperpyrexia never occurs, complications are rare, and there are no sequelae; the mortality is less than two per cent. On account of the variability of the initial symptoms of paratyphoid, the maintenance of fever for more than a fortnight in some cases and the frequent similarity of irregular cases to mild cases of typhoid fever, a positive clinical diagnosis can rarely be made. All cases require and should have blood examinations and the recovery growth and recognition of the bacteria.

Xanthomatosis with Chronic Jaundice.—O. Posner (Deut. Mediz. Woch., Jan. 21, '09) relates the case of a woman of 37, with cirrhosis of the liver and jaundice, but no ascites. Generalized zanthomatosis developed, with intense pruritus during exacerbations. None of the dermal lesions showed any tendency to retrogress; they developed symmetrically and mostly on parts exposed to friction. Treatment had to be merely symptomatic.

The social treatment of disease is having some attention in a few of the large cities. Humanitarians at the head of some of the hospitals and dispensaries are endeavoring to take into account the adverse environment which so often is the cause of ill-health. It is certanly folly to expect much real value to accrue from a few words of bum Latin in the form of a prescription when the patient is hungry, homeless and friendless. After all it would perhaps be better if disease were treated more socially and less with only prescriptions. Steps are now being taken by State boards of health and sanitarians everywhere to try to stamp out the great scourge of the race, tuberculosis. Already efforts in this direction are bearing good fruitage with a lessening in the ravages of the death-dealing disease. Venereal diseases should be limited, for certainly prevention is better than cure. We build hospitals and eleemosynary institutions rather ungrudgingly for the diseased and afflicted, and this is a tribute to our generosity and Christian impulses. but it would be infinitely better to prevent or limit the need of these institutions. Legislators, sanitarians and humanitarians should put forward their best efforts to prevent the marriage of people who will bring forth a progeny that is defective physically or mentally. It is better not to be born at all than without a reasonable chance of being sound in body and mind. Ophthalmia neonatorium is a disease that causes nearly all the cases of congenital blindness. It would be better to prevent it than to build blind asylums to care for those wearing sightless orbs. Disease is a condition that should and does concern the public more than it does individuals. Those afflicted with contagious and transmissible diseases, as well as the mentally defective, physically decadent and morally perverted, should not be permitted to marry and procreate. It is time we were getting over our foolish sentimentality on this matter. We are treating it at the wrong end. Of course men and women can not be likened to horses, but the only way to eliminate disease is to take a lesson from the advancements made in breeding and improving stock.

Osteomyelitis of Adolescence.—W. E. Savage (Lancet-Clinic, Oct. 10, 1908), does not find acute infective osteomyelitis at this period to be rare; some writers describe it as acute epiphysitis; it is an inflammation of bone and its medullary canal; it is infectious, and is caused for the most part by the staphylococcus aureus and the streptococcus pyogenes which enter, not by an open wound, but by the blood stream. The disease begins near the epiphyseal line, probably by reason of the strain put upon the growing bone in various forms of exercise and play. Boys are affected more frequently than girls, being more exposed to the changes of heat and cold. Sudden change in the surface temperature is perhaps the most frequent predisposition. A boy goes skating, returns home in excellent spirits, wakes up at night with a chill, high fever, probably delirium, and a pain in his thigh or leg; this is a picture rather typical of the beginning of acute infective osteomyelitis. Clinically there is no essential difference from inflammation of the softer structures. the difference in the resistance of bone as compared with that of more yielding tissues being considered. Malignant pus in muscle and in bone, for instance, may be compared to a dynamite explosion in sand and in stone,

the more resistance offered to active pus the more destructive does it become. The constitutional symptoms evidence this. The amount of destruction depends upon the causes and the location, but more especially upon the treatment. Necrosis is the rule in the acute infective osteomyelitis; death may supervene within 72 hours from septicemia or pyemia. Necrosis of the bone, either partial or entirely, more frequently occurs. The diagnosis is not generally difficult; we consider the age, the sudden onset with chill, fever and pain; the location and character of the pain. Acute articular rheumatism is often mistaken for osteomyelitis; erysipelas when the periosteum is involved early and the redness of the skin is marked; typhoid fever when the grade of infection is low. The differentiation from periostitis and osteitis may be impossible; nor very necessary to make, the treatment being much the same. The prognosis is grave, depending upon the exciting cause, the location and duration of the lesion, and more especially the treatment. Savage finds poultices, iodine, heat or cold and the streptococcus serum useless. Opiates and the salicylates are dangerous, except for the patient's temporary comfort. "The most conservative treatment is a radical surgical operation"—the earlier the greater the chances of life and the assurance that only a limited destruction of bone will take place. The bone cavity is irrigated with some antiseptic solution, the infected tissue is removed; paraffine wax is bad surgery; iodoform gauze is to be used; persistent discharge indicates dead bone.

Cultural Characteristics of the Tubercle Bacillus.—J. von Szabáky, Budapest, has found: 1. The luxuriance of growth of tubercle bacilli varies according to the nutritive medium employed; they thrive best on lung agar, next on sputum agar, sputum-lung-agar, tuberculous lung-agar, not so well on egg media and somatose-agar. 2. The B. T. grow best and quickest on the very weak acid media; fairly well on the slightly weak acid, neutral and alkaline media; and not well on the markedly acid media. (Exception: somatose-agar and egg media. On the former they thrive best and quickest when the agar was markedly alkaline, next when it was weakly alkaline, worst when it was acid. The best egg media cultures were obtained when the reaction was markedly acid, next when it was markedly alkaline, and least when it was neutral.) The rapidity of the development in the greater number of cultures corresponded with the luxuriance of the vegetation; accidental results must therefore be excluded in these experiments. 3. The growth was constantly the best on very moist media, such as lung-agar; worst on egg media, which is least moist. 4. The B. T. produce probably a change in the original reaction of the nutritive medium during their growth, as titration has demonstrated that the reaction of neutral salts changes somewhat after the culture has grown several days. In all the media titrated by Szaboky (except somatose-agar) these changes were noted: first alkaline, then acid, and finally again alkaline; in somatose-agar the order was reversed.

Recurring Coryza, from simple "cold in the head" to pronounced hay fever is merely a manifestation of the arthritic diathesis (P. Cornet, Presse Medic., Jan. 16, '09). The nasal mucosa is an excretory organ, and the excretion through this membrane of some of the toxins generated in the disgestive tract may be one factor in recurring coryza. In a number of Cornet's cases errors in diet have been promptly followed by coryza; the situation is akin to the congestion observed in the face during difficult digestion. Reflex irritation from the digestive tract distends the vessels, heats and reddens the face, and by stimulating the glands renders the skin greasy and pimply. This same process in the nasal mucosa induces swelling, congestion and excessive secretion; the nerve fibres in the mucosa become irritated from the recurring or continuous autointoxication and the consequent hyperesthesia renders them peculiarly sensitive to dust inhaled or changes in temperature. Cornet finds regulated diet (meat and alcohol being avoided) the best cure; he allows only a little white meat at noonday. If local measures are deemed necessary he applies the actual cautery to the hypersensitive points. We must cauterize sufficiently deeply to destroy the nerve filaments, but this alone is futile unless the underlying autointoxication is combated. The hypersensitive points are mainly these which protrude and upon which the inspired dust and germs lodge. The arthritic diathesis is, in the nomenclature of our Gallic colleagues, the family tendency to sluggish elimination of waste products and toxins.)

The Autoprotective Mechanism in the Human Body is stated by C. E. de M. Sajous (N. Y. Med. Jour., Feb. 27, 1909), to include (1) an immunizing centre situated in the pituitary body and closely related to the heat centre; (2) the thyreoparathyreoid glands; (3) the adrenals, through which are governed general oxidation, metabolism and nutrition; and (4) special nerves which connect the immunizing centre (through the heat centre) with these two sets of organs. The presence of a toxin in the blood causes increased function of the immunizing centre and coincidently a rise of temperature; fever is thus an index of the functional activity of this autoprotective mechanism.

The Etiology of Beri-Beri.—H. Fraser and A. T. Stanton (Lancet, Feb. 13, 1909) have made elaborate experiments in the Malay peninsula. Some parties were fed on parboiled rice, other groups, working under the same conditions, used the white rice unboiled. Twenty cases occurred among the 220 people who lived on the unboiled rice; among 273 who lived (under the same conditions) on the parboiled rice, no case whatever occurred. No case of beri-beri occurred in any coolie who had been on white (unboiled) rice for a less period than eighty-seven days. In no instance were any organisms found which could account for the disease. In no case did the disease seem to be directly communicated. No evidence was forthcoming to show that any article of food other than rice was a possible source of a causative agent. It would seem that beri-beri, as it occurs among the Malays, is intimately related to the consumption of white (unboiled rice); and further research is justified.

Beef and Turkey.—The Lancet has made the following careful study of the physiological quantities in a Christmas dinner of average proportions: Physiologists assume that the standard amounts of the different nutritive constituents required daily by a person in health should be about 4.5 ounces of protein, 18 ounces of carbohydrate and 1.8 ounces of fat. In what proportion are these physiological quantities

contained in the average Christmas dinner? In such a dinner one would eat roast turkey, 8 ounces, or the same amount of roast bee; potatoes, 6 ounces; green vegetables, 4 ounces; and Christmas pudding, 6 ounces. If beef be selected the value of this diet would be: protein, 2.32 ounces; carbohydrate, 4.2 ounces; fat, 2.31 ounces; whilst if turkey be selected the figures would be: protein, 2.12 ounces; carbohydrate, 4.2 ounces; and fat, .51 ounce. The choice of a turkey would mean therefore an intake per weight of meat of much less fat, whilst the protein and carbohydrates would remain about the same. The allowance of beef would supply more fat than is needed according to standard for the whole day; but the turkey would only supply roughly a quarter of that allowance. In both cases the amount of carbohydrate despite the Christmas pudding, falls short of the daily physiological allowance; which, however, is easily compensated by using bread. From these and a number of other figures it would appear that the actual dietetic requirements of the body are more likely to be exceeded by a Christmas diet including beef than by a diet in which beef is replaced by turkey."

Hereditary Disposition as a Factor in the Etiology of Tuberculosis.—J. von Izaboky, of Budapest, found, from a statistical investigation of 1,456 tuberculous and 1,433 non-tuberculous cases that the danger of infection should be recognized and every means of prophylaxis welcomed; but we should not overestimate the danger of infection, nor magnify the current phthisiophobia by excessive precautions. We must recognize hereditary as well as acquired disposttion; the former is as frequent as the latter. The greatest rate of percentage was shown by those with an inherited taint; the mother's and father's sides being equally represented. In only one-third of the cases did tuberculosis show itself in the parents before the birth of their children; a smaller percentage showed tuberculosis in the grandparents; and in the smallest percentage tuberculosis in brothers or sisters was noted. The "phthisical habit" is not characteristic of tuberculosis nor of hereditary disposition, although it occurs chiefly in hereditary cases, less often in acquired ones and almost never in the non-tuberculous. Hereditary disposition exerts no influence upon the gravity of the cases, except where the taint was inherited from various collateral relations when the disease ran a severe course. The inherited taint occurs relatively as often in older as in younger patients.

Anthrax.—Barlach (Med. Klin.), who has practiced much among workers in leather, has had much success with the following method: (1) Rest in bed invariably and absolutely, since movement favors the entrance of the bacilli into the blood stream. All pressure on the pustule is, for the same reason, carefully avoided. (2) In slight cases fomentations of aluminum acetate or sublimate, the former especially when the pustule is on the face; (slight cases are such when the disease has remained local, the pustule being situated on an area not markedly hardened, even with some redness and swelling). (3) In severe cases the pustule is slit open, the pointed thermo-cautery is used in a ring of rather deep punctures close together, around the pustule, so that a groove results; and this groove hinders the passage of the bacilli from the pustule into the surrounding tissues. The numerous incisions formerly employed are not found by Barlach to be necessary; he now uses them only when there is excessive tension from the oedema. He uses also antiseptic fomentations. He has had excellent results, in many severe cases (with severe oedema and erysipelas) from iodine injections—one or two drops of the tincture at different points on the border of the erysipelas, 5 to 10 cm. apart, using, generally, about eight minims, or in very bad cases up to seventeen minims. This may, if necessary, be repeated each day following. Barlach has also found these injections in ordinary erysipelas, especially of the wandering type.

Influenza in Children.—Breton (Rev. Mens. des Mal. de L'Enf.) recommends isolation even of convalescents during epidemics. Disinfection of the room is of value. Even with many cases in one family separation is admissable, because some cases run a much simpler course than others. The first outing of the convalescent must be managed with great care; there is special danger not only of relapses, but also of sequelae, such as pulmonary congestion. For gastrointestinal factors we had best restrict diet, except water. For the pulmonary factors, hot packs, mustard sinapisms and hot baths are counselled. Phosphate of guiaicol (4 to 7 grains per diem), according to age for the influenza; raw bone marrow for the adenopathies.

The "Public Trustee" seems to be an important institution in English life; his duties are multitudinous and most diverse. Following are some of the things he attends to: "Some children in the west of England who were taken over with their estate had to have their faces washed and were so reported on." Again: "A Border widower (rather a vague classification of widower), with an obscure disease, being in relations with the Public Trustee, begged him to seek suitable medical aid. London was ransacked and a specialist found who consented in the circumstances to give his services for nothing; whereupon the patient (in the far north) sent railway time-tables and asked the department to look up the doctor's train," which he did. The same client enlisted aid in choosing "a suitable stone for his wife's grave, and infinite pains were taken with the matter." Busy man, this Public Trustee!

Head Injuries.—W. S. Simmons (Long Id. Med. Jour., March, 1909) believes that basal fractures should be left alone if there is, in a reasonable time, some evidence of improvement. If, however, no tendency to recovery is apparent, or if the symptoms at first, whether slight or severe, do not improve or decrease in intensity, then it were best to explore the middle fossa on both sides if necessary, and thus give these desperate conditions the only aid possible from a surgical standpoint.

Drainage of the Bladder.—G. P. Harris (Yale Med. Jour., March, '09) states cystitis to be the commonest cause for drainage, when associated with thick and inflamed bladder walls and urine loaded with pus, mucus and blood, decomposed and foul smelling. This condition is found mostly in the elderly, as a result of enlarged prostate; in younger patients it may exist from obstruction due to urethral stricture. These cases are never too far advanced for treatment; frequently one kidney is involved before the other; and if the process can be stopped by washing out the bladder regularly the remaining kidney will be able to carry out the work and the patient may recover.

MISCELLANY

Insect pests, according to a Cornell University professor, cost the farmers of the country seven hundred million dollars a year.

A Punishment Fitting the Crime.—Abdul Hamid, the deposed Sultan of Turkey, is reported to have been sent into retirement with eleven wives.

Anterior Poliomyelitis.—H. G. Franzen (Northwestern Lancet, April 1, 1909) reports a case having the usual features—perfect anesthesia, absence of preliminary fever, persistent algesia. Electricity should not be used in the early stages; there is positive harm from it in acute inflammations.

The Turkish Sultan is declared by N. C. Adassides in The American Magazine to be a degenerate of the lowest order. He is descended from a long line of tainted stock, with both father and mothers suffering from tuberculosis; his is "an enfeebled dynasty that is afflicted with every kind of disease of mind and body to the point of actual insanity."

A Reassuring Statement.—The Lancet relates that a patient with a malignant growth of the larynx consulted a specialist, who recommended removal of the organ. The patient feared the operation would be dangerous, but the surgeon assured him he was bound to recover. "The mortality is nineteen out of twenty, and I've had nineteen deaths already."

Dispensary Collections.—In many of the out-patient departments of the Berlin clinics the former system of placing a contribution box for patients' contributions has been changed for a regular charge of six cents for a week's treatment, tickets being sold on these terms, the color of the tickets indicating the day of the week. Paupers and the very poor are exempted.

To Help The Tuberculous.—James M. Prendergast, Esq., has given nineteen acres of land in West Roxbury, Mass., to the Boston Association for the Relief and Control of Tuberculosis. Night camps will be established upon this ground for men who are still able to work; and day camps for women who are consumptive. The occupants will pay a small fee for the use of the camps.

Pyelonephritis.—D. N. Eisendrath mentions five clinical types (Am. Jour. Med. Sc., Feb., 1909): The hematogenous, to be subdivided into the hyperacute, acute and subacute; the urogenous, subdivided into the recurrent, febrile and continuous febrile; the pyelonephritis of children; of pregnancy; and that of the puerperium. Eisendrath lays stress on the importance of correct diagnosis, and emphasizes (in the first type).

Mechanical Hemostasis as a Preventive of Loss of Blood During Operation.—Willems (Le Progrès Médical, Jan. 23, 1909) says that German writers favor a rubber bandage around the waist for compression during operations upon the perineum and lower extremities. Thin subjects, continues Willems, offer good examples. But one case, which was pronouncedly scoliotic, had to be bandaged and compresses places under this. Monod advises slow removal of the tourniquet.

Physicians' Confessions.—At a recent meeting of the Philadelphia County Medical Society, the members were relating some of their psychic cures. Dr. de Sajous related how a man brought his daughter for treatment. She had lost her voice. "I tried the battery on her and her voice returned perfectly in a short time. The father was in such glee that he hugged me. When they had gone I happened to look at the battery, and saw that the current had not been turned on."

Arteriosclerosis, states G. S. C. Badger (Bost. Med. and Surg. Jour., March 18, 1909) does not always call for treatment. There may be no symptoms attributable to it and the damage already done to the vessel walls cannot be cured; at best the process may be stayed or hindered. Causative factors must be corrected. High blood pressure does not always demand treatment—in some cases it is protective against disaster. A falling pressure is oftentimes ruinous. Treatment must be based on the ability properly to regulate the life of the individual.

Grippe.—There has recently been a very serious outbreak in England; and it has been observed that painters in oil, if not absolutely immune, are less liable to be attacked by influenza than members of other professions. Possibly this is due to the low temperatures and good ventilation of British studios; or to the preventive chemical properties of the mediums and vehicles used by the artists. Possibly turpentine is a prophylactic; it is noted that water-color painters and decorative artists who do not use oils are frequent sufferers.

Radium in Surgery.—Sir Frederick Treves (Brit. Med. Jour.) considers that we have practically reached the therapeutic limitation of the X-rays, the high frequency current and the Finsen light, but that in radium we still have unexplored fields of usefulness. Treves believes (without desiring to raise false hopes) that radium will cure every form of nevus-port wine stain, pigmented or hairy mole and rodent ulcer which has not yielded to the Finsen light or the X-rays; and this in two sittings of an hour each. Much is also accomplished in the early stages of lingual and labial epithelioma.

The first open-air public school for tuberculous children in America is now in operation on the roof of the public library at Franklin Park in Boston. This experiment is being carried on by the Boston Association for the Relief of Tuberculosis. The progress made by open-air pupils is the same as that made by normal pupils in the same grade in the public schools. On the roof these children live in all kinds of weather, from nine in the morning until five at night. Each child is provided with a heavy blue ulster and a brown cloth bag, into which he crawls.

The Asthma Plant of Queensland.—The euphorbias are very numerous in this colony; and among them is the euphorbia pilulifera, the "Queensland asthma plant," which has a remarkable reputation for curing this disease. Several pharmaceutical preparations of the plant are extensively sold in Australia. By analysis a green plant contains 79 per cent. by weight of water and three per cent. of ash, leaving 18 points of vegetable matter. A dried plant contained an alkaloidal substance equal to about one point in a thousand; it contained also a glucoside amounting to not more than four parts in the thousand, possibly one or both of these substances is the active principle.

PREVALENCE OF CANCER.

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ON briefly reviewing a few weekly lists of published statistics of deaths in Philadelphia, for these latter years, I earnestly note how persistently fatal cancer stays to pester and destroy the lives of our population. I will not claim that the cancerous form of degeneration is positively on the increase, though earlier records would doubtless prove it to be so. But it is positively demonstrated that the obnoxious disease is not on material decrease of prevalence.

For example, 1899, week ending January 14, yields 21 deaths from cancer in this city. Week to January 21, shows 19 deaths ditto; 1901, week to November 9, there were 18 deaths by cancer; 1904, week to April 2, 18 deaths ditto; week to September 9, 20 deaths; 1905, week to October 14, records 22 deaths ditto; week to November 11, 26; 1906, week ending May 26, there were 29 deaths by cancer; week ending June 23, there were 30 deaths ditto; 1907, week to April 6, gives 28 deaths; week ending December 14, shows 28 such deaths; and week to December 23, increases to 33 deaths; 1908, week ending November 14, we have 26 deaths by cancer; 1909, week to February 21, 33 deaths; and week ending May 8 shows that 33 perished by cancer. 384 deaths in 15 weeks.

For the present service of practical comprehension, we will lay aside our gowns of groping strain for scientific speculation, our hypothetical guess-links devised to make pathological ends seem to connect, and get down to a recognition of the simple process of life's physical output,—the plain plow-turning to light and aeration of sullen sod and soured subsoil which naturally grow, in their perverted way, the debasing crops of acid sorrel, of vagrant weeds, of fetid "dog-tail" and other avaricious usurpers of soil, whereby they drive normal crops astray; whereby they displace the wholesome clover and timothy that promote benevolent yields of staple wheat and corn that aid in preserving physical health, comfort and happiness for the human family.

And at this day it would be as futile to consume time and cold print in claiming that cancer, any tumorous growths developed in the human body during youth or maturer life, depend on heredity for propagation, as it would be waste of breath to contend that "the sun do move." Recurrence of cancer in family lines logically evolve from the coincidences or similarities of family situations, family environment, their customary imitative domestic habits and errors of daily continuance, including sleeping hours, and which altogether dispose to a lowered or degenerate standard of blood-quality with resulting tendency to mal-nutrition in various degrees. It requires but a minute of fair reasoning to discern that the loosely-used word "hereditary" can only mean what is born with a child from the mother-blood imparted during inter-uterine residence prior to birth. Therefore, even if said mother continue to nourish her child from her own bosom for a few months after birth, that ends the problem of a cancerous cachexia being imparted by the mother-blood. After weaning from the mother's milk, the infant's vitality is conserved or maintained and its blood constructed entirely from sources separate from the channels of heredity. Hence if any fungus growth be imparted by heredity it should manifest itself within two years after birth, while the nutritive construction derived from the mother's blood may hold active representation in the formative blood of the offspring. Nevertheless, who among us has ever seen unequivocal demonstration of cancer in infants or children less than two years old,—as compared with the prevalence of fungoid tumors and growths that afflict adult and elderly life?

Learned essays about vagrant bacilli unwisely credited with the creative potency of perverting the constructive cell-force of the human body in various locations, wherein is developed a sequence called "cancer," leave us with confused understanding, with lessened ability to ameliorate the unhappy situation, and proffer little alternative except resort to an emergency cutting exploit, and then stand in blank suspense regarding the ground-floor problem of cause or prevention. The blood of the body is the life of the body and of all its cells and tissues if the blood be of normal purity. The blood of the body is the circulating defaulter of every organ and tissue and formation in the body; if the quality of the blood be rundown, become abnormal, its nature perverted, its proneness to diseased conditions and structures dominant on provocation. In this pathological situation the normal functions of the blood waver, stagger, and the human system is correspondingly marred as the natural result. Let the form of affliction be what it may, said affliction could not exist if the feeding blood cells were not deficient in sanitary function.

The mouth, stomach and liver, intestines, peritoneum, breast, uterus, skin, are the locations where cancer is usually developed. Numerically, cancer of stomach and liver lead. Cancer of the breast, of the genital organs, and of the bowels rank second in frequency. Evidently the cancerous condition of stomach and liver are often allied. In my own judgment, the cancerous stomach precedes the wreckage of the liver, as sequence. In my early practice, in a rural community, I was called to relieve an elderly woman who had been long complaining. Found her moderately jaundiced. A swollen condition from side to side across region of stomach. Constant nausea, acute pains and persistent vomiting after swallowing food or drink. Attended her several days without evident benefit. Consultation was suggested. A medical gentleman from the nearest town met me to consider the case. He diagnosed, "Cancer of the liver and speedily fatal." I had carefully studied "Abercrombie on the Stomach," with reference to benefits of subnitrate of bismuth for relief of painful vomiting in cancer of stomach, and stated frankly, though I was much the junior, that I believed the patient was a victim of cancer of the stomach. We mutually rested our opinions on the evidence of a possible post-mortem at death. Within a week more the end had come, the doctor with me again, post-mortem under way before funeral. Dr. P., being much my senior, used the knife. On opening, we found the lobes of the liver much enlarged, spotted with cancerous nodules, some of which were softening with ulceration. "I thought so," said the doctor; "we will close the incision." "Not yet," I hastily replied, "go on to the stomach." He did so. At the gastro-duodenal opening of the stomach were two thickened bands of morbid structure with ulcerating surface internally, and which had caused the intense pains after swallowing any material given her. I removed that pathological specimen and preserved it for years in alcohol. As to diagnosis, both doctors were satisfied because both were correct. I have no doubt that

industrious woman had repeatedly bruised her stomach by bending over washboards, by lifting and pressing against her stomach heavy tubs and full wash-boilers, and aggravated the situation by swallowing lots of scalding foods or drinks that literally peeled the helpless pylorus—to say nothing of sharp pickles bolted and vinegars consumed. Despondent blood could not prevent catastrophe. In those days, country work-women knew little and allow me to add thought less about preserving sanitary tone of blood which could restore promptly bruise or blow upon the flesh. Why cancer of the liver as sequence of cancer of the stomach? The degenerate exude from a raw cancerous surface in the stomach, at the very gateway to the intestines, would be conveyed with the food pabulum direct to the blood current; and as the liver then labored to strain out this corruption from the circulation, we readily perceive what must become of the infected liver.

As to location, cancer of the lips, and of the mouth (dreadful cases that they prove to be), is often explained by excessive resort to pipe-smoking. General Grant's fatal invasion of cancer of the throat was authoritatively attributed to extreme habit of smoking cigars. This habit grew on him while conducting his campaigns in the Civil War. But we must not forget, that his cancer did not develop in his throat until after his physical energies were worn down by arduous work, further by fracture of his leg, yet also by rascally betrayal of his business trust which involved him in sweeping financial reverses that would have driven many another less balanced man to the madhouse. His blood had lost its resistive and repairative tone. An elderly gentleman, patient of mine, who eventually died of cancer of the mouth, was an inveterate smoker of the pipe whenever in his house at home. It was his habit to sit in shirt sleeves, close beside a gassy range fire in the kitchen, or by the sitting-room heating stove, from early till late, drawing the concentrated tobacco smoke through the dirty stem of an old pipe while absorbed with his newspaper or book. In time he was prostrated with a severe attack of grippe. While slowly convalescing, before leaving his bed, he discovered a moderate sized sore inside his left cheek where the lining was reflected and joined the upper jaw. We used mild antiseptic wash for cleansing and applied subnitrate of bismuth frequently to promote healing. But the sore gradually advanced. I endeavored to tone up his blood. He rallied enough to get out and around; but the sore went farther and deeper. His friends began to clamor for an "operation." I told him that I declined to do any cutting there, then retired, and a more venturesome man was called to the case. As the sore was spreading itself along the jaw, this new man advocated removal of a section of the superior maxilary to clean up the infection. But the patient's blood was too impoverished to accomplish any healing process, and the cancerous disintegration spread faster from the edges of the operator's wound. Another section of the jaw was stupidly removed with the idea of cutting away the diseased portion. The patient's blood could effect no healing, and the man's doom was speedily sealed. Degeneration spread through all proximate tissues. The cheek decayed and collapsed. Starvation hastened to end the wretchedness. So much for systematic cutting when the patient's blood possessed inadequate healing properties! This paper is written because of my conviction that in the state of impoverished blood, impoverished tone of the human system, cutting operations, even in conditions of cancerous degeneration, are in eight-tenths of cases, unwise procedures unless the surgeon is willing to make his knife a means of hastening the hour of impending peril.

Twenty years ago I had for a patron a poor lady who lived, cooked and slept in one room. She won her means of livelihood with her sewing machine. She was much esteemed by her church friends—who always provided her with enough work to make herself comfortable. She was thin, delicate, under par in general health. Had a small cook stove in her room and used coal oil lamp for lighting. A pernicious combine against enjoyment of good health! In time a scirrhus tumor appeared in one of her breasts. The lump often pained her. I began a conservative line of treatment, consisting of mild combination of iodine, chloroform and camphor applications alternating with dry treatment of stearate of zinc and subnitrate of bismuth as dryers to prevent early disintegration of the surface—for the skin was immediately involved. Friends, as usual, suggested removal by operation; but she resolved to abide my personal judgment. I advised that she keep her little lump, so long as it was not killing her, continue the drying treatment, rather than risk the uncertainty of anesthetic and shock of surgeon's wound by removal. About a year afterwards my patient sent to me for consultation a friend, a nurse, who had found a lump in one of her breasts. I would not decide with great positiveness, but reasoned both sides of her problem, and let her decide for herself. She was influenced in favor of removal of her tumor. Went to a hospital, and her breast was amputated. In about three months she was reported dead and buried—while my patient continued to live and moderately run her sewing machine. In about a year longer the scirrous development in my patient's bosom had drawn the structure into knots, captured and inverted what had been the nipple, and a patch as large as a nickel had broken down and began to ooze its offensive discharge. In the course of a month this exuding surface considerably enlarged. Dry absorbent treatment had been contained as more desirable and comfortable. In about six months later the depression of hot August weather, general debility and a turn of bowel trouble closed the brave and patient contest. But she had found many enjoyments within those nearly three years with dried back carcinoma in her breast.

A very different but instructive case was that of Mrs. S., widow, in midlife, husband had been proprietor of an academy in the interior of Pennsylvania, a lady exceptionally gifted and vivacious, had for several years been my professional patron after removing to this city. Her talented son having won the position of dramatic editor of a prominent city newspaper, she was favored with complimentary tickets to all theatrical performances that she desired to attend, and she prized her rare privileges. Night strain, late hours, rather than needful rest at her time of life, added to the depression of her naturally delicate health. Narrowed circumstances limited her boarding house accommodations. In cold weather her room was warmed by small heating stove—always an evil adjunct in a sleeping room. One hot summer day some friends on visit to the city desired her to trail them through the big department stores for

shopping diversion. She hastily dressed to gratify these friends. Unprepared with summer costume, and having thinned in figure, her heavy dress skirt sagged from the band. Impulsively she caught up a handy string, fastened it in the button hole at her back, drew it over her shoulder, fastened it to her skirt band in front to carry the weight of her skirt, and hastened along to devote the remainder of the sizzing day to her friends. On undressing in the evening, she found that her extemporized string had sunk a line into her full-rounded bosom to its base. A month later she came to me complaining of occasional discomfort and a suspicious "lump" deep in her breast above the nipple. It was the size of a small olive, and had made her nervous and apprehensive. I counseled calm and hopefulness of mind, reasonable rest from fatigue of dramatic entertainments, avoidance of all crowd breathing-air, nourish herself as liberally as possible, we would apply anodynes to the skin and be trustful. But she was not that type of creature.

In a fortnight she returned to see if I thought the "lump" had receded. It had not. Again I endeavored to allay the impetus of goading anxiety. Twinges of pain held her attention. She then visited me to say that so many persons had urged her to have the growth removed, lest it terminate in something incurable, that she had about made up her mind to undergo the operation. I felt impressed that, as it was, she would never mentally rest: if the tumor, though small indeed, was removed, she would have less occasion for worry; I therefore conceded to the situation. Arrangements were effected for her admission to University of Pennsylvania Hospital, and for a late eminent professor of surgery there to conduct the case for a liberal sum fixed by himself. I took occasion to write the Professor, in advance, to draw attention to the lady's delicate constitution, and urging that the small tumor only be removed to relieve her mind, that the operation be made as small as possible in doing so. It is a bitter chagrin of the soul to realize that when some surgeons begin to cut they enthuse with extravagant courage to carve the subject. Instead of simply removing the small development in this lady's case as palliative, the surgeon amputated her breast completely, and then complicated the situation by opening to the axilla and dissecting out the lymphatics. He evidently believed he was rounding out a royal operation of surgical science!

Her son, who was present, told me his mother nearly sank from profusion of hemorrhage after the cutting. As soon as she was able to be removed from hospital, she returned to my care to heal the remainder of her wound. With reconstructive tonics and nourishments besides local management I hoped for success. Her room quarters and stuffy heating stove and served meals were not cheering. The incisions reluctantly healed to a remaining space about an inch in length—then stopped. In a few weeks the sore was eating its way along the entire line of incision towards the axilla: she was disabled to dress her injuries for herself. I then advised that she return to the hospital for care. The operator had been paid his fee. He looked in at her once. Young house physicians had her in charge, and were experimenting with a blue neutralizer of "cancer germs"! Finding she was hopelessly worse, her son asked me to visit her. She implored me to get her from the hospital. I arranged that she be removed the next day to my own home. The mass of cancerous degeneration spread from the line of the incision forward, over the chest to the shoulder line: backward over scapular region half way to the shoulder. Her arm and hand swelled so immensely that a platform rest had to be fastened upon the arms of her chair to support them when out of bed. I dressed and bandaged her mass of exuding sores every day; wrote her will relating to a few personal effects, and witnessed her struggling signmanual. In six weeks she ceased to suffer—a terrible ending for so fine a character. In her depressed state of system the heroism of the surgeon's knife had immediately made her condition a hundred fold worse in every respect and hastened life to its tragical end.

The result of most cutting operations is largely measured not by the mere skill of the operator, but by the degree of repairative tone and quality of the blood pabulum by which nature can heal and life survive. Hence off-hand operating is an atrocious procedure. How often it is given out: "The operation was successful, but 'blood poison' ensued, and death was the result." A raw grass-slobber of subterfuge for professional escape from the equivalent of incidental murder! Reason out the problem. If the condition of the blood, the general system, and therefore of the organic tissues also, range below normal degree of vitality, a blow or bruise upon the cells, for instance of the mammary gland, as in the sad case of Mrs. S., may launch a nucleus of abnormal nutrition from disordered blood, blood which does not conduce to healthy service and formation, and hence may lead to the construction of aberrant formation or tumor, whether of harmless or of malignant tendency being governed by the special errancy prevailing in the blood at the time. A healthy grade of circulating blood-cells, carried with the regularity of every pulse-beat to the bruised part, would naturally and ordinarily repair the local injury without further incident. There need be little anxiety about the matter afterward. But, to get this idea clear, a morbid state of the blood, blood deficient in normal vitalizing qualities, is by incidental provocation diverted to abnormal function, to abnormal constructive process, too often depositing material of tumorous growths—even cancer. A cancerous tumor is a construction devoid of sanitary vitality—a fungus-like brigand of useless material fed by degenerate type of blood, and early or later tends to progressive unhealable degeneration. A disabled state of constitution is the precursor of cancerous conditions. Corrupt blood breeds corruption, let its form of manifestation be what it will. Surgery as modernly practiced is often too eager for exploit without due and serious pre-consideration of systemic conditions.

I know of one remarkable exception of conservative surgery, that merits public notice. A personal friend, a lady graduated nurse esteemed by many, courageous and ambitious, who loved her profession and found it a source of happiness. In the course of years she took charge of a well-to-do lady advanced in life who was suffering with a form of physical degeneration known as gangrene. It began with a sore at the ankle and gradually extended up the limb. For months this enthusiastic nurse cleansed and dressed the decaying parts, applied the antiseptics, trimmed dead flesh with scissors, scraped exposed bone, braved every exigency in the case to the end. Perhaps six months later this

nurse discovered a disagreeable vaginal discharge, soreness and pain at uterus, particularly from the pressure when seating herself upon a chair. Naturally a speculum examination was called for, when it was revealed that she had cancer of the womb. Loving life, and having interests to live for, she consented to have the uterus removed. When the abdomen was opened the surgeons discovered that both ovaries were involved, and decided that under the discouraging circumstances of her physical condition, excision of her genitals could promise no prospect of benefit. At once the abdominal incision was closed without further cutting. As an old friend I was written to later on to visit her. With quivering voice she narrated her situation. To quote her own words: "The incision healed beautifully, but I am to wait. I wish so to get well—but I suppose it is hopeless." In about two months more the end came —exhaustion by repeated hemorrhage which washed out her life! The wear of her work amid impurity doubtless brought her system to the cancerous state. "I would not like the family to ever think that: I suppose it is my time to go," she submissively responded the last time we conversed. On occasions of my visits to this unfortunate sufferer, I many times thanked God that there were surgeons who would not voluntarily slay a woman for the sake of exploiting another operation to swell their boasted list.

I yet feel tender gratitude when I contrast this pathetic case with one that I considered literally like surgical murder, and where I had been retained to administer the anesthetic and watch the flickering pulse. My practice was then in the anthracite coal region. Was sent for to visit a lady suffering with pain and disturbed stomach. Found she had doubtless a fibrous tumor of considerable growth connected with an ovary. A doctor from another town, who sometimes did operations for tumors, had seen the case and urged immediate removal. Finding the woman and her husband were disposed to have the obtrusive formation taken away, I could advance no positive objection. A day was set. The doctor came to conduct the work for a fee of fifty dollars. I succeeded in keeping the patient comfortably unconscious till the rudely done operation ended and the incised abdomen was sutured shut. She woke from the anesthetic pleased to find herself alive. I was certainly glad also. The next day showed no gain, nor the next; the third day she expired. Another "successful" operation; but the patient's vitality was too low to survive. It is my belief that with the mitigating aid of morphia this woman might have remained with her family for months or years. Note an example: In the same town I attended a patient, the wife of a minister, who had a similar tumor of quite obtrusive size. By having her attend well to vaginal douches for cleanliness, and building her up physically, her system slowed the abnormal growth. It was not of malignant nature, and she carried it about as an inconvenient but customary annex. So long as this tumor did not distress the lady, I earnestly advised against a cutting operation for its removal. Fully fifteen years afterwards I was told that this woman and her tumor were yet living together, though the latter had become much larger. Compare that history with this one: The wife of a thrifty saloon-keeper living near me in this city found that a tumor was developing in her lower abdomen. An experienced surgeon was called to investigate. The ugly ogre of possibility of a tumor terminating in malignant cancer, if not prevented by early removal, is always a ready bugbear to spring upon the suspensive minds of patient and friends. The woman's systemic condition received no probationary study. That process would be undiplomatic service —postponement of slippery opportunity—delay of fee consideration—time exposure to veering uncertainties! Hence the arrangements for operation were promptly effected—the size of fee stipulated—the skilled performance finished. I think it was next day that the startling news came out: "The operation was successful—but the lady died from shock!" And the sorrowing husband grieved: "The awful venture robbed me of my wife's life—and it looks as if I had paid these surgeons six hundred dollars to kill my wife!" The victim was a lady known for many excellent Christian qualities—esteemed with much regard. But her blood was of reduced grade—her system not equal to the requirements of such operation at the time it was perpetrated.

The most complicated case of cancer that ever came under my professional management remains to be briefly narrated. Was called to this case February 25th, 1896. The date is given to note the progress of unusual experience endured. Without hinting at age, the lady had raised to adult life and to their marriage three daughters and a son. She was one of those over-zealous housekeepers in her nearly luxurious home. No dust, no fly escaped her attention, and little fresh air entered by her windows. In earlier life she was of rather fine, robust figure, and seldom ill enough to need a physician. I had been the family physician about twenty years. When called to her this time, she was sitting in her exquisite dining room. A little shawl covered her shoulders. She astonished me by saying that she had a sore breast—then several months—that it was becoming worse because it was making her arm lame. I had frequently observed that she had naturally an unusually full bosom. When she then removed her shawl from her left shoulder, I was shocked to find her left breast in a state of confirmed cancer with skin broken down to raw sore. Added to this misfortune, erysipelas, which proved to be of phlegmonous type, had extended from the sore to her left shoulder.

To my anxious question, why had she let this thing progress so far before calling medical attention, my surprise continued. Practical and intelligent as she was in other matters, she informed me she had been having an illiterate woman, from the country, to "pow-wow" the breast, and had been using a salve furnished by this woman, expecting a cure without the aid of a doctor. The presence of fiery erysipelas was conclusive evidence that her blood was decidedly of low, impure quality, and that at such a crisis no cutting operation could benefit the patient. The time for removal of the tumor or of the breast had hopelessly gone. The lymphatics in the axilla were already hardened knots. When followed to the door by the expectant oldest daughter, I told her it would be unwise to anticipate the recovery of her mother. In a few days the surface inflammation had spread down the left arm and captured the hand, which swelled to the limit of the skin. Then the inflammation started across her back, which by March 11th was widely involved and her right breast savagely attacked. By this time her left arm and hand were

improved. A spot on her right breast began to ooze. By March 19th the erysipelas sores, as far as had spread, were generally healing except the right breast. The cancerous mass in the left breast was now slowly degenerating. By March 23rd a phlegmonous abscess of the right breast opened and very profuse discharge of purulent matter and fat globules ensued. By this time, also, the left hand, nearly well, peeled its dead surface. I removed the thickened dead shell of the palm in one unbroken sheet, and preserved it several years dry. Antiseptic injections into abscess in right breast were resorted to freely. By March 26th, I began with scissors to trim away the sloughing portions of the cancerous mass in left breast, then in state of active degeneration. The erysipelas feature was growing milder, but was then spreading from back and hips down the thighs. Meanwhile her face had shared a moderate covering with the surface inflammation, but was relieved in a few days. By March 29th the right breast was a fearful mass of wasting sore. The back and sacral area then admitted of relief by applications of silk antiseptic isinglass plasters to arrest bedsores. On March 31st I found the bedsores severely rawed again by the nurse having put heating, festering oilcloths beneath the patient's tender back.

By April 1st the legs were practically healed and the thin wrappings of absorbent cotton discontinued. Then came another nurse-blunder. The left thigh grew suddenly worse beneath the isinglass dressings. Nurse had forced a tight bandage around the thigh. The back also pained severely till I got that girdle of bandage removed. The right side of her abdomen had also become sore.

On April 2nd we were cheered by general improvement. April 7th very little pain. All sores granulating except cancer, which was advancing toward the axilla of that side. Patient began to sit up an hour at a time in sitting room. April 15th the weather brought a hot wave—88 to 90 degrees in the shade. This made me apprehensive of result. April 19th weather temperature rose to 92 degrees heat. Almost daily I clipped more slough from degenerating tumor—which was firm, fibrous, white beneath cut. But patient continued to sit up awhile every day. I even began to hope we might exhaust and be relieved of the cancerous mass by natural degeneration. About May 5th she was enough improved to be helped into carriage and driven with enjoyment through our extensive Fairmount Park. By urgent recommendation of the manufacturers, at this stage of the affliction I was induced to give a certain protonuclean and peroxide of hydrogen outfit the opportunity of its advocated advantages in cancerous development. By May 13th another hot wave was upon us, the tumor mass stank. The protonuclean treatment was promptly abandoned as worse than useless. My usual antiseptics were resumed. The patient, however, began to sink and on May 20th she expired in complete quietude—after having made the bravest contest in the face of destiny. It has always been my belief that with her depraved state of blood, if we had ventured a cutting operation in her case, we would have murdered a good and worthy woman.

Perhaps an interested reader may desire a closer glimpse of the line of treatment pursued in this most difficult case. There is no natural defence to operate against the progress of real cancer, or any other form of degenerate development, except that of improved state of the nutritive blood. Therefore on general principles of vitalizing nutrition, the patient was encouraged to use every article of diet that she could relish. Nature helps to decide the choice. Arbitrary feeding is usually the fierceness of a narrow and capricious understanding. Violation of a squeamish rule often saves the day for the restricted patient. In my patient's case, we sought the widest range of acceptable foods. Antiseptic alterative tonics were administered daily. Capsules, fresh filled, with acetanilid, benzoate of soda, salol, citrated caffein—these braced with tonic salicin, or with quinine for bitter substitute—furnished varied and excellent combinations. Pulv. pyrophosphate of iron was my preference when iron was used. The reconstructive compound syrup of the hypophosphites conjoined with syr. acidi hydriodici shared their turn in the service. Tablets of morphia sulp. were resorted to when pain prevented sleep at night.

Externally, when desirable, I cleansed and refreshed the inflamed surface with dilute, quite odorless antiseptic solution, easily and variously prepared, and painlessly served with the soft end of a moderate tuft of absorbent cotton, but avoiding surplus wetting. The heat of the skin dries the part in a minute. Meanwhile I spread upon a really thin sheet of absorbent cotton, cut to shape, a sparse retaining portion of salve, consisting of lanolin, vaseline, boracic acid, subnitrate of bismuth, sometimes reinforced with carbonate of magnesia, well combined and in comforting proportions. This antiseptic retainer serves as foundation to hold the dry dressing, consisting of a smaller proportion of boracid acid to the larger proportion of subnitrate of bismuth then freely dusted upon the face of the harmonious salve, and smoothly adjusted to the skin—part by part till covered—and held in place by light gauze bandage. This form of surface application is cleanly, never depresses, is easily removed and replaced, produces no stale or disagreeable odor to the patient, promotes surface healing as rapidly as nature can co-operate. Such dressing should be applied at least morning and evening. In our severe and extensive case, this form of application did great service—for the erysipelas complication was handsomely recovered before the onset of rapid exhaustion brought the end.

Now a parting word in regard to contagion. I am unavoidably impressed that men who are always spying after contagion, even striving to identify it by some scavenger "cocci," are zealous connoisseurs in matters of acute diagnosis. What is the advantage to the sick? I read to-day in a fresh medical journal: "Erysipelas is an acute contagion and infectious disease." I honestly and frankly doubt the gentleman's "streptococcus" conclusions whether copied or original. While I live and can reason, I shall prefer facts to confusing fancies. It has come to my experience during fifty years of general practice to personally and intimately handle many cases of erysipelas, with my face close over the patient, day by day, and my hands upon the inflamed skin, hour by hour, but I have never discovered the slightest evidence of infection in myself, and have never seen a second case develop in any family where the disease had occurred. So much for "contagion." Stripped of newfangled bangles, What is erysipelas? Replied to in Websterian simplicity of phrase, erysipelas is an inflamed surface-expression of lowered physical tone—

the evidence of abnormal grade of blood. And what is cancer? A freak product of abnormal nutrition from and by abnormal quality of blood. Normal grade of blood cannot produce an abnormal or unsanitary physical product.

1726 North Twenty-second Street.

ANALYTICAL REPORT OF ONE HUNDRED CASES OF TYPHOID FEVER.*

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THE hundred cases of typhoid fever here reported occurred in the writer's services in the Norwegian and Williamsburgh Hospitals between July 8th, 1906, and August 31st, 1908. They form a continuous series, being all of the cases of that disease treated by him in those hospitals in that period.

Types of the disease varying from mild to very severe were found in the series, but the percentage of severe infections was above the average, particularly among the cases which developed in the spring and early summer of 1906 and 1908; the milder types prevailed among those which were infected in the late summer and autumn of 1907.

The ages of the patients ranged from six to sixty-four. Seven were under fifteen, forty-four between fifteen and twenty-four, thirty-six between twenty-five and thirty-four, five between thirty-five and forty-four, five between forty-five and fifty-four, and three between fifty-five and sixty-four.

In eighty of the cases the blood was examined for the Widal reaction, with positive results in seventy-one and negative in nine. Probably the number of negative reports would have been smaller if repeated tests had been made after the diagnosis was established clinically.

In ten of the series the maximum temperature did not exceed 102 degrees F.; in nine it was between 102 and 103; in thirty-two it was between 103 and 104; in twenty-nine it was between 104 and 105; in thirteen it was between 105 and 106; and in seven it was between 105 and 107.

Constipation was present in seventy cases, diarrhoea in twenty-three, and in seven the bowels were regular.

Tympanites was sufficiently marked to be noted in only ten of the series. In sixteen cases relapses occurred, in thirteen of which the relapse was separated from the original fever by an afebrile period. The average duration of the relapses was fifteen days. Seven of them occurred in patients who were constipated, and nine in those with diarrhoea. In only two of the cases with relapses was the maximum temperature of the original attack less than 104 degrees. Two of the relapses were complicated by intestinal hemorrhage, two by pneumonia, one by phlebitis, one by peripheral neuritis, one by melancholia, and one occurred in a patient who was in the sixth month of pregnancy. Four of the relapsed cases died, two of intestinal hemorrhage and two of pneumonia.

Complications other than relapses were noted in thirty-six cases.

Intestinal hemorrhage occurred in eighteen cases, of which nine had diarrhoea, eight were constipated, and one had regular movements. It was the apparent cause of death in eight cases.

Pneumonia occurred certainly in eight cases and probably in nine, and was the apparent cause of death in six cases. In one of the fatal cases it involved two lobes, and in three others it was complicated by intestinal hemorrhages. In nearly every case the type was lobar as far as could be made out without unduly disturbing desperately ill patients by too vigorous examinations. In one it was distinctly lobular. The three that recovered did so with difficulty.

Perforation happened in one case, in which there had been also intestinal hemorrhages. Laparotomy was promptly performed, but the patient died.

Phlebitis was present in four cases.

Acute myocarditis was noted in two cases; they recovered. but convalescence was protracted.

Chronic myocardial degeneration with marked arteriosclerosis proved a fatal complication in one case.

Acute nephritis was present in one case complicated by pneumonia and intestinal hemorrhages.

A large ischio-rectal abscess developed in one case which died of intestinal hemorrhages.

Cystitis occurred in two cases.

Mastitis developed in one case; it resolved without suppurating.

Especially marked polyuria following oliguria was noted in one case.

Appendicitis was present in one case, which recovered without operation. It was probably a recurrent attack, as the patient had had appendicitis before. In another case significant pain in the region of the appendix led to the suspicion of appendicitis, but examination of the blood tended to exclude that diagnosis and suggested the true one of typhoid fever.

Acute articular rheumatism seemed to co-exist in two cases, in one of which acute endocarditis developed.

Pregnancy was present in two cases, both of which recovered, though in one there was relapse in which occurred several severe intestinal hemorrhages, and also abortion with uterine hemorrhage large enough to cause a sudden drop of nine degrees in the temperature. In this case vomiting of pregnancy and obstinate hiccough persisted long enough to seriously jeopardize the patient's life, which was still further imperilled by the extensive hemorrhages.

The deaths in this series numbered sixteen.

The cardinal facts about the fatal cases are as follows:

CASE 1. Patient aged 39; admitted in the third week of the disease; constipated. Developed pneumonia with temperature of 106.4 and died on the nineteenth day.

CASE 2. Patient aged 26. Admitted in the second week of the disease. Had a relapse and severe diarrhoea. Died of intestinal hemorrhages on the forty-first day.

CASE 3. Patient aged 24. Admitted in the fourth week of the disease after a sea voyage from Malta, where the infection took place. Had diarrhoea. Had a relapse from which he recovered, but the day after the temperature reached normal it suddenly rose to 106 and remained near that point for twelve hours until the patient died; the pulse rate during that time being over 140 and the respirations over 40. No signs of consolidation

* Read before the Brooklyn Pathological Society, January 14th, 1909.

were made out in the lungs, though pneumonia was suspected.

CASE 4. Patient aged 18. Admitted in the second week of the disease. Had severe diarrhoea. Died of intestinal hemorrhages on the eighteenth day.

CASE 5. Patient aged 22. Admitted in the third week of a severe infection. Had diarrhoea. Temperature had declined nearly to normal when a relapse occurred of greater severity than the original attack, the temperature reaching 107. Death from intestinal hemorrhages took place on the eighteenth day.

CASE 6. Patient aged 24. Admitted in the fourth week of a severe infection. Had diarrhoea. Temperature 106.8. Had a succession of severe intestinal hemorrhages and died on the fourth day.

CASE 7. Patient aged 12. Admitted in the fifth week of a walking case, in a relapse. Constipated. Died of a single large intestinal hemorrhage.

CASE 8. Patient aged 14. Admitted in the third week of the disease with a complicating pneumonia. Had diarrhoea. Died on the third day.

CASE 9. Patient aged 42. Admitted in the first week of a severe infection. Had diarrhoea. Developed a large ischio-rectal abscess. Died of intestinal hemorrhages on the eighteenth day.

CASE 10. Patient aged 22. Admitted in the third week of a severe infection. Had diarrhoea. Had severe intestinal hemorrhages. Died of perforation on the eleventh day after a futile laparotomy.

CASE 11. Patient aged 48. Admitted in the third week of a severe infection. Had diarrhoea. Died of intestinal hemorrhages on the sixth day.

CASE 12. Patient aged 64. Admitted in the first week of an apparently mild infection. Constipated. Heart action was feeble and irregular and arteriosclerosis was pronounced. Pulmonary oedema and death took place on the sixth day.

CASE 13. Patient aged 25. Admitted in the first week of the disease. Constipated. Developed bronchopneumonia with a rise of temperature to 106.8. Had several intestinal hemorrhages. Had also an acute nephritis. Died on the thirtieth day.

CASE 14. Patient aged 48. Admitted in the third week of a severe infection. Had diarrhoea. Died of intestinal hemorrhages on the sixth day.

CASE 15. Patient aged 38. Walked into the hospital in the third week of a mild infection. Had diarrhoea. Had on admission or developed soon after, pneumonia with a temperature of 106.6. Had several intestinal hemorrhages. Died on the third day.

CASE 16. Patient aged 25. Admitted in the first week of the disease. Constipated. Developed pneumonia and died on the thirtieth day.

It will be seen from the foregoing that eight of the fatal cases died from intestinal hemorrhage, six from pneumonia, one from perforation, and one from toxaemia overwhelming the heart of an elderly man with myocardial degeneration and arteriosclerosis. It will also be seen that ten of the fatal cases were admitted to the hospital in the third week of the disease or later and consequently were not fair cases on which to demonstrate the value of treatment. Subtract these ten and there remain only six fatal cases which can justly be considered in reference to the treatment, making the death rate 6.5 per cent. in ninety cases among which the proportion of severe infections was above the average.

In this connection it is interesting to note McCrea's statement in Osler's "Modern Medicine," that in any large series of cases of typhoid fever the death rate will be found not far from 15 per cent. and Osler's statement in his "Practice," that the typhoid death rate in cases treated privately varies between 5 to 12 per cent., while in those treated in hospitals it varies between 7 and 20 per cent., and also the death rate from this disease in two of the largest hospitals in America, the Boston City and Bellevue, in the year 1906, 14.7 per cent. in the former and 18.5 per cent. in the latter.

The treatment of the cases in this series, other than nursing and regulation of diet, was purely symptomatic.

The nursing was done by a training school in the Williamsburgh Hospital, and in the Norwegian hospital, where most of the cases occurred, by deaconnesses. It was probably as good as that in the majority of general hospitals.

The diet during the febrile period and for a week or ten days after was fluid. It included water in abundance, a mixture of pasteurized milk and barley water, peptonized milk, "artificial buttermilk" made with pure cultures of the lactic acid bacillus, blanc mange made with Irish moss, barley water, clear broths, some of the artificial peptonized foods, egg albumin water, strained orange and lemon juice, weak tea and coffee and ice cream. Whole raw milk was never given.

The "standard diet" consisted of six ounces of a two-to-one mixture of milk and barley water and six ounces of albumin water containing the white of one or two eggs flavored with lemon juice, given alternately so that the patient received one or the other every two hours while awake, with all the water he could comfortably be made to drink, given between the feedings. This standard diet was frequently departed from, usually by omitting the albumin water and giving in its place the milk and barley water mixture. Strained orange juice was regularly given diluted with water. On this diet the patients throve very well, emaciation of more than moderate degree was not common, and tympanites and diarrhoea were comparatively infrequent. The artificial buttermilk was given as the principal food in only a few cases, but in those it proved satisfactory.

Changes in the diet were called for by some of the symptoms and complications.

In gastric indigestion peptonized milk was given and albumin water, and sometimes one of the artificial peptonized foods. A certain kind of soluble peptonoids added to the milk and barley water mixture made the latter acceptable to some stomachs which did not take it well alone, and increased its nutritive value.

When there was much diarrhoea barley water was the principal food.

When intestinal hemorrhage occurred all feeding was stopped for a short time, or barley water, albumin water or the peptonoids given.

At the first appearance of tympanites milk in any form was excluded from the diet.

No solid food was given until at least a week after the fever had abated. In the severe cases the interval was ten days or more. In average cases strained gruels were given on the seventh day, then well cooked rice or wheatena and milk toast, and after a few days of such feeding, scraped beef and soft boiled eggs. Chops and steaks were not allowed until the temperature had been normal at least two weeks.

The more important symptoms and complications often called for particular treatment. Following is a summary of the main features of such treatment.

When constipation existed, a simple enema was given every second day. No carthartics were given by mouth.

Diarrhoea, when not corrected by change in the diet, was controlled by bismuth subnitrate in small or large doses, and occasionally tincture of opium in addition.

Tympanites usually yielded to modification of the diet. When it did not, turpentine stupes were applied to the abdomen and a high rectal tube inserted after saline irrigation. Turpentine by mouth was reserved as a last resort; in no case in this series was it necessary to give it.

For restlessness and delirium, especially in the early stages of the disease, sodium bromide was given freely, and sometimes small doses of morphine, rarely large doses.

The fever when higher than 102.5 by rectum was treated by sponge baths, tepid, cold or ice cold, by cold sheet baths, or by cold rectal irrigations.

For the myocardial weakness which was often sufficiently pronounced to call for treatment, strychnine sulphate in doses of a sixtieth of a grain four times a day was the first drug given. In moderate cases this was sufficient; in severer ones more strychnine was given, and tincture of strophanthus in doses of one and a half to three minims, never larger, every four hours. In bad cases caffeine, camphor and aromatic spirits of ammonia were employed as accessory stimulants. Whiskey was sometimes given also in these bad cases, but only in small, frequently repeated doses. Judicious stimulation of the heart was an important feature of the treatment of these cases, the object being to raise the falling blood pressure and with it the ability of the tissues to resist degeneration, and also to increase the amount of excretion by the kidneys.

The only distinct indications for whiskey that were recognized were pronounced toxaemia and a previous alcoholic history. It was never given in other than moderate doses, aggregating one to four ounces in a day.

For intestinal hemorrhage calcium chloride or lactate was given in fifteen grain doses every four hours, and small doses of morphine, enough to quiet peristalsis, but not enough to lock up the intestinal secretions; and the ice coil was usually applied to the abdomen.

When perforation occurred the case was immediately turned over to the surgeons for operation.

1239 Pacific St.

Renal Tuberculosis.—Casper (Soc. for Int. Med. Berlin) finds that every urine which contains pus or blood without any definite cause should awaken a suspicion of renal tuberculosis. Nephrectomy is the best treatment, after diagnosis by ureteral catherization in conjunction with other measures (cyroscopy, the indigo, carmin and phlorozidin tests). If these diagnostic means are not feasible then after exposing the affected kidney its ureter may be clamped and the urine from the other kidney obtained and tested in the usual way, in order to determine its functional capacity. Such an examination will prolong the operation only a few minutes; and will afford exact information of the condition of the other kidney.

PULMONARY EMPHYSEMA.

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THIS condition is characterized by dilatation of the alveoli and infundibulae and atrophy of the alveolar walls. There are five forms: (I.) Hypertrophic emphysema is the form most frequently seen in practice. It is called also vesicular, substantive, idiopathic or large-lunged emphysema. The causes: There is frequently a congenital, hereditary weakness of the pulmonary tissues, consequent upon which a persistently high intra-alveolar tension induces the dilatation. The disease may follow chronic coughs, bronchial asthma and especially pertussis—the tendency in these diseases being to increase the tension within the air-vesicles. Glass blowers, workmen who lift heavy weights and musicians using wind instruments are also prone, and for the same reason.

The pathology: The anterior margins of the left lung cover the pericardium. The lungs are distended and pit on pressure; one sees the air-vesicles enlarged beneath the pleura. Under the microscope we find atrophy and rupture of alveolar walls with the junction of contiguous vesicles; there is much obliteration of the inter-vesicular capillaries. We find chronic bronchitis, with thickening of the bronchial mucosa; the bronchioles are dilated; the fibrous tissue around the bronchi increased. The right heart is hypertrophied and dilated, by reason of the obstruction to the flow of blood through the lungs; in long-continued cases both sides of the heart evidence hypertrophy. There is general passive congestion in other organs and tissues, especially in the liver and kidneys; and in the systemic veins. Advanced emphysema is generally accompanied by cardiac hepatic and renal lesions; and dropsy may evidence this.

The symptoms: The disease is generally insidious, beginning often in early childhood; it runs a very chronic course—through many years—with exacerbations due to bronchitis, to renal and digestive irregularities, and to insufficient cardiac compensation. Dyspnoea on exertion is an early symptom, as it is the most important and distressing; this may appear only after exertion or overeating; in course of time it becomes constant; it is chiefly expiratory and often with distinct wheezing; later there are asthmatic attacks, with both inspiratory and expiratory distress. Cyanosis is common. The concomitant bronchitis may be slight in summer; but very little exposure in winter months will emphasize the cough and lead to dyspnoea, cyanosis and perhaps severe and pitiful attacks of asthma. The temperature is apt to be subnormal, the pulse weak but not rapid; progressive arteriosclerosis; the skin cool; the strength gradually fails; the weight decreases. The symptoms are progressively aggravated with advanced age.

The Physical Signs: On *inspection* we find the chest enlarged and of the characteristic barrel shape; its antero-posterior diameter is increased, the ribs nearly horizontal, the intercostal spaces wide, the sternum and clavicles prominent, as also the sterno-mastoid muscles. The neck appears short, from the elevation of the clavicles and shoulders; the back is rounded. Inspiration is short and energetic; but there is little expansion and the chest "moves as a whole"; its principal movement

is vertical; the upper abdomen retracts during inspiration; Expiration is prolonged; the thorax sinks slowly. The accessory as well as the ordinary respiratory muscles are large and prominent. Cyanosis is evident, with distension and even pulsation of the cervical veins. The apex beat of the heart is not visible; but pulsation is usually to be observed at the epigastrium. On *palpation* we find vocal fremitus diminished; the apex impulse is not felt, but there is epigastric pulsation.

On *percussion* we find the characteristic hyperresonant, vesiculo-tympanitic note, of "woody" or "boardy" quality; this note extends often above the clavicles with supraclavicular bulging. The upper border of hepatic and splenic dulness is less distinctly marked and further down than normal, by reason of the pressure of the expanded lungs; the area of cardiac dulness is either diminished or obliterated. On *auscultation of breathing* we find the inspiration short and feeble; the expiration wheezy, prolonged and low pitched. There are sibilant, whistling dry rales; and also the moist or coarse rales due to bronchitis. The pulmonary second sound is accentuated; we may, late in the disease, detect a tricuspid systolic murmur.

The diagnosis: This is easily made by the characteristic dyspnoea, cyanosis, the accompanying bronchitis, the appearance of the chest, the hyperresonant note, the diminished cardiac, hepatic and splenic dulness and the prolonged, low-pitched expiration. We differentiate from pneumothorax: The latter is usually unilateral and as a rule suddenly and seriously developed; there is a distinctly tympanitic rather than the hyperrosonant, vesiculo-tympanitic note of emphysema; there is metallic tinkling and perhaps succussion sounds; there is a line of flatness at the base of the lung. We must consider that a pneumothorax may result from rupture in an emphysematous area. Pleurisy with effusion may be mistaken for emphysema; but the unilateral flatness, the hectic temperature and other evidences of pleural involvement will make the decision easy.

The prognosis: The emphysema becomes slowly and progressively worse; but life may be prolonged many years by judicious regimen and therapeusis, by alleviation of the symptoms, skillful treatment of the exacerbations and of the affections with which the emphysema is associated. Recurrent attacks of bronchitis aggravate the disease; death may be due to an intercurrent lobar or broncho-pneumonia or to the development of phthisis. Dropsy, hemoptysis or acute cardiac dilatation with cyanosis may terminate the case.

(II.) Acute vesicular emphysema is an acute dilatation of the alveoli by strong inspiratory efforts in such affections as bronchitis, bronchopneumonia, angina pectoris or cardiac dyspnoea; in cardiac cases there is the combination of violent inspiration with cyanosis and pulmonary congestion. The hyperresonant note denotes the enlarged lungs; there is also diminished cardiac and hepatic dulness, prolonged expiration and general sibilant breathing.

(III.) Interstitial emphysema is the presence of air in the interlobar spaces or beneath the pleural tissue because of rupture of the air vesicles from wounds, from severe coughing in pertussis and other lung diseases; from straining at work or at stool, during convulsions, or in labor. This form is seen frequently in young children. The air may press along the trachea into the neck; after tracheotomy it may develop in the reverse direction. Pneumothorax may result. A friction sound as of the crumpling of paper is the only means by which we may hope to diagnose this lesion until we see the subcutaneous emphysema in the neck.

(IV.) Atrophic, known also as senile or small-lunged emphysema, occurs in the aged who have small chests with very obliquely placed ribs and other signs of senility; we shall here find a history of winter cough and dyspnoea extending through many years. There is diminution in the pulmonary volume, directly the reverse of hypertrophic emphysema. The lesion is characterized by atrophy of the alveoli with coalescence of their walls so as to form a series of large vesicles.

(V.) Compensatory emphysema. Here the air vesicles of normal lung tissue are distended to fill the pleural space resulting from contraction of other portions of the lung, as in tuberculosis, broncho-pneumonia, chronic interstitial pneumonia, cirrhosis, pleurisy with effusion, tumors, and the like. When there is deficient expansion of a lung or a part of a lung the remainder of the respiratory organs will expand to compensate for the areas which are thus out of action. If the causal condition is removed early enough the emphysema disappears; otherwise a true hypertrophic emphysema will develop. Localized emphysema will occur about broncho-pneumonic areas, tuberculous cicatrices or when extensive pleural adhesions prevent lung expansion.

The treatment is largely palliative; but when it is conducted judiciously and with insight we can accomplish much to alleviate the distress and to prolong life. We do not, however, hope to restore emphysematous lungs to normal.

We advise that a climate suitable for the individual case be sought out; and that a permanent home be made in the climate which has thus been found. A warm, dry, equable climate will be best for most patients. We require a hygienic mode of life; the open air daily; a little exercise; the feet always warm and dry; exposure and wetting to be especially avoided; appropriate underclothing; everything done to guard against recurring attacks of bronchitis. A wholesome diet, simple but nutritious, is essential; we must improve the nutrition; milk and clear soups; roasted or broiled beef, mutton and lamb, chicken, fresh fish—meats in moderation; moderation in sugars and starches; no rich gravies, or confections. The stomach should never be overloaded. The emunctories (bowels, kidneys and skin) should act well; we must thus relieve the general venous congestion and consequent dropsy; laxatives, cathartics, diaphoretics and diuretics are prescribed as indicated.

We look most carefully after the heart and the circulation; strychnine and ergot are used—but sparingly, and only as indicated. Later, when venous engorgement and arteriosclerosis are pronounced we use digitalis and nitroglycerin.

For the accompanying chronic bronchitis we prescribe much as in that disease—ammonium carbonate and muriate, sanguinaria, chloric ether. We examine carefully the upper air passages; we treat all inflammations of the respiratory mucous membranes; we remove all hypertrophies, exostoses, etc. We treat the cyanosis as in asthma; the inhalation of compressed air or of oxygen may be indicated; venesection may be most beneficial. Alcohol may serve best in exhaustion.

The following is Delafield's resumé of the treatment of the dyspnoea: When this is due to spasmodic con-

traction of the muscular coat of the bronchi we give inhalations of the fumes of stramonium, nitrate of potash, chloroform or ether, and internally chloral, potassium iodide, belladonna and opium. Dyspnoea due to congestion of the bronchial walls is relieved by such drugs as increase mucus flow—lobelia and grindelia robusta; such drugs as stimulate the heart—caffeine, convallaria and digitalis; or by dry cupping over the chest walls. Dyspnoea due to contraction of the small arteries is relieved by the arterial dilators—nitrite of amyl, nitro-glycerine, chloral, potassium iodide, opium. Dyspnoea due to inflammation of the nasal passages is treated by local applications.

Following are formulae much used in emphysema. The "emphysema mixture" employed in hospitals: ℞ Potass. iodid, gr. v.; morph, sulph. gr. 1-12; tr. bellad. M. v.; spir. ether comp. M. xlv.; aquae q. s. ad. ℥ss. S. ℥ss. p.o.n. The A. B. C. Diuretic: ℞, Potass. acet., bicarb., et. citrat. aa gr. xv.; inf. digit. q. s. ad. ℥ij. L. Dose ℥ij. ℞, Ext. quebrach. ℥ij.; tr. stromonii ℥ij.; vini antimon. M. xviij.; syrup grindel. robust, ℥j.; syrup seneg. ℥ss.; syrup tolutan. q. s. ad. ℥iv. M. S. ℥i. t.i.d. ℞, Pulv. stramon. fol. ℥j.; pulv. cascaril. cortic. ℥ij.; potass. nitrat. ℥ss.; pulv. ipecac, ℥ss. M. Dry thoroughly. S. To be burned and the smoke inhaled during attack.

ON BIOGENESIS.

BY W. CARL SCHOENIJAHN, M. D.
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THE preparation of a paper of the subject title, verging perhaps upon the philosophical, is justified by the continued broadening of the medical horizon. It may be interesting to occasionally depart from the narrow confines of symptoms and treatment, therapeutics and freaks of nature to a brief consideration of biologic investigations and the theoretical speculations of master minds on the question: What is life, and what its origin?

Considered from a point of metaphysics life is the result of the reasoning of a higher power: the creation of a God. If we cease our investigation here we cannot as men of science admit that we are satisfied. It is but justice that the question be considered from the metaphysical realm, and the materialist will accept any proof from that direction. He seeks the truth. At the same time he expects his own speculations to be considered in the proper spirit.

Since earliest times there have been hypotheses, more or less fanciful and fantastic, to account for the origin of life. But the fantastic has now almost completely given way to the physical and metaphysical, the materialistic and spiritualistic. If man can, by any materialistic and physical philosophy evolve a theory which to the human mind untrammelled by the dogmas of religion and metaphysics seems a plausible one, and properly acceptable, why need he look to the supernatural for an explanation of the matter?

The theory that all life had its origin in the simple primitive cell is accepted without question by all scientists. Monism of the positivistic kind was too dominant in the nineteenth century speculation, for it made science purely utilitarian, excluding as far as possible any metaphysical philosophy. With experience in research joined with speculation these problems are gradually being removed from the supernatural and explained along the lines of physical and chemical laws which we consider absolute, quite to the satisfaction of the well-balanced materialist. For a simple instance, in bible times and considerably later, disease was attributed to devils or bad spirits, which could be cast out by incantation and appeals to a higher power. To-day we know what disease is. We see its causation, recognize its pathology. No more devils for us.

With the enunciation of the cell theory in 1838 by Schleiden and Schwann, with the development of embryology as worked out upon that theory by Kolliker and Remak, and with the correlation of these facts to the functions of the body in health and disease by such men as Max Schultze and Virchow, His, Strasburger and Loeb, and many others, considerable advance has been made toward the truth. The materialistic monism as fathered by Darwin denies all purposiveness in life. Following it, the idealistic form, as advanced by Ernst Haeckel, recognizes in Nature, if not the designs of a Creator, at least an intrinsic finality in the improvement of man. Materialistic science to-day places the evolution theory of Lamarck and Darwin against the older miracle of creation ;it has stimulated thought which has worked out and placed chemical synthesis against the phantasy of a "vital principle," so-called; it advances in place of a hypothesis of an unknown separate force to explain thought and consciousness the theory of the equivalence and transformation of physical and chemical forces. Theories and hypotheses need only correspond reasonably with the states of existing knowledge in order to be of some value, even if only relatively right. The theory of preformation held that the germ cell contains a veritable image miniature of the future body, the unfolding of which creates the organism. Naegli's idioplasm theory argues that heredity is not transmitted by the cell as a whole, but by a particular part, the idioplasm. Spencer's theory is analogous to that of Darwin's pan-genesis, in which he assumes that the somatic cells of the organism all throw off minute particles which are collected and constitute the sexual elements; which when supplied with nutrition suited to their conditions, multiply by cell-division, and ultimately reproduce the unit from which they were originally derived.

These theories have been useful, though no longer entertained. Most interesting is the theory of Ehrlich, which had the advantage of a better knowledge of the laws of chemistry and physics, coupled with the theories advanced by many antecedent speculators. Ehrlich ventures a chemical theory which makes all forms of life naught but chemical machines, its origin, growth and differentiation being determined by definite chemical change. It is held that the idioplasm of the nucleus consists of a mass of material, each molecule of which is composed of a central indestructible carbon or cyanogen ring, which, perhaps, determines the nature or function of that particular cell, to which the various molecular or atomic side-chains can become attached or removed without impairing the integrity of the central ring. This central ring is considered immut-

able, with numerous unsatisfied valences, which become satisfied and depleted in the accomplishment of the various life processes. In short it is reasoned that the life phenomena are naught but a chemical state of the constituent molecules of the cell. Pflüger has shown the great instability of living matter; tinually being dissociated into more stable comhow very complex and unsettled molecules are conpounds, such as water, carbonic acid and urea; that is, the intra-molecular movement of the cell is its life. So far as has ever been demonstrated, the molecular composition of a living cell is the same as that of a dead cell, although the living cell possesses powers of assimilation, secretion, growth and reproduction not evident in the dead cell. What is there in the idioplasm of the cell molecules which is peculiar to it and which differentiates it from nonliving matter? If life itself be not an inherent property, an inconceivable force, why does not inorganic matter, subject to every conceivable force of nature, under widely different conditions, spring into life? Or if life be a phase of electrical phenomena, what occasions the polarization, the magnetic state with differentiated poles and induced fields? We must confess that at these questions we balk.

By the nebular theory of creation we can assume reasonably that at some period in the contraction of the mass of gases, at a late era, when some portion of the earth's body was cool enough to permit the continuance of its growth, the elements which we know to be present in protoplasm were united under peculiar conditions of heat and pressure to form the primitive cell. Thus would the creation of life be as natural as the creation of water. To a degree, this has been artificially produced. Butschli has imitated in every detail the appearance of protoplasm by artificial emulsions. By mixing intimately canesugar or potassium carbonate with old olive oil he obtained an emulsion, a small quantity of which, placed under a microscope showed not only the physical peculiarities of protoplasm, but also spontaneously took on amoeboid movements. Thus far we may say that a substance has been artificially produced manifesting certain properties of protoplasm. It may possess irritability and contractility, which however are common to both organic and inorganic matter; but the essential attribute of living matter, reproduction, has barely been assailed. To be sure, certain investigators have made experiments tending to prove that the origin of life in the inert ovum of the female is simply a question of chemistry—and yet not simply, for the ovum before and after fecundation by the male element shows no appreciable change in the chemical character of its protoplasm. It is assumed that the fecundation causes a special arrangement of the atomic particles of the elements present which stimulates the chemical activity which constitutes the life of the cell. An analogue may be derived from inorganic chemistry by the synthetic production of certain compounds through jarring or electrical influence. For example, two atoms of hydrogen and one of oxygen will lie side by side inert for an indefinite time. Let us pass an electric spark through them and immediately the atoms arrange themselves into a molecule of water. Here the valences being mutually satisfied, after the first commotion all action, or let us say life, ceases. In the cell the union of the elements produces a chemical change which for some reasons, as yet undetermined, continues. There is growth, or building up, and in higher organisms death. At first living matter probably could manifest vital phenomena indefinitely, which is true of certain germ cells to-day. The higher organized and more differentiated cells do not show such vitality. Seeds that have been buried in the pyramids 5,000 years will sprout and grow under proper conditions of heat and moisture to-day. Although even in this instance we do not understand the exact cause of the germination, we hardly look to the mysterious "vital force" to account for it. The energy to carry on the chemical process of living when once started is stored in the seed, awaiting only proper physical conditions to start the marvel of existence.

Professor Loeb has shown that osmotic pressure is one of the constant and potent factors in physiology. In regard to generation he has proved that segmentation in the ovum in certain low forms of life is possible without the approach of any male element where that has hitherto been considered essential because of the existence of sexes in that particular creature. He has shown that by simple agitation and osmotic pressure it is possible to stimulate segmentation to the sixteen cell and thirty-two cell stage of embryonic development, without fertilization by the male element; also that by osmotic pressure, again without fertilization, he can develop from the ovum of the sea-urchin, a free swimming animal. He believes that his failure to produce an entire adult animal is due only to his ignorance of the laws of osmotic pressure. Certain salt solutions have been proved to cause unicellular organisms to undergo cell division. Misplaced germinal cells may undergo in the body a seemingly spontaneous development, and thereby give rise to teratoma. Normal tissue cells of the body may through irritation, possibly due to germs or toxins, take on an entirely abnormal character and develop malignant disease. These call disturbances are due to chemical change, the added element causing a rearrangement of the atoms composing the protoplasm of these cells, and a widely different form of cell is the result; for example take the giant cells of sarcoma, or the fatally abnormal cells of carcinoma.

In our every-day practice of medicine we endeavor by adding or subtracting certain chemical substances from the organism to stimulate or depreciate the normal or abnormal actions of cells which are lazy or diseased, or influence them to a more healthy action. In some instances we can definitely predict the results of our medication. Yet it may be truly said that we are still mostly in ignorance of the finer and ultimate effects of our remedial agents. The thought occurs that many of our empirical remedies might be studied with this idea in mind, and opens a possible wide field of research. Would not a closer knowledge of biology be of service to us and influence to a large degree many of our frequently worthless contributions to the archives of the corner druggist? In the lower animals whole organs and entire series of organs wonderfully complicated, organs of alimentation and circulation, as well as organs of sight and touch are completely regenerated after destruction. And this is done in laboratories by grafting and en-

couragement through chemical environment. Animals are split longitudinally and horizontally and grafted to other animals. When man in a comparatively brief time has achieved such wonders, so insulted nature, as it were, who shall say where he must stop?

I present this paper simply to contradict the dogmatic statement made by so many that no matter what he achieves, the Creator will never allow him to solve the problem of life. That is, he will never create artificially a substance that shall manifest irritability, conductivity, contractility, nutrition and reproduction. For this is all that he need to do. No matter how low the form of his creation, he has solved the problem which may be the stepping stone to higher things.

A brief apology for the title of this paper may be proper, for so little has been as yet published as positive that one can merely point to the writing on the wall which shows a possibility of future advance along the lines so absorbing the lives of our greatest scientific men. Last year a scientist in England read before a London medical society a paper in which he claimed that he had by adding certain chemical substances to the environment of a certain low form of animal created a creature different from the parents of the ovum. This man was openly jeered at by his confreses, so that he left the meeting in disgust. Remember how Harvey was scoffed at when he advanced his ideas of the circulation of the blood. It is wrong from religious or sentimental motives to stifle or discourage inquiry in any direction. It is likewise in this age of freedom of thought impossible to so choke it off. It is easy to assume the existence of a primitive force which emanates from a higher power and which determines the origin of the phenomena we term life. To dismiss the question here and say that life is God-given is simple. God made man and breathed the breath of life into him. Here you may shelve the matter if you will. But we have men to-day who have laboratory advantages and brains enough to continue investigations along the lines suggested by the work done with life when it exists, who will penetrate the mystery surrounding the conditions before.

The picture I wish to present is one which to my mind is by no means wildly extravagant. Imagine some one of these men some day, possibly in the near future, bringing into a certain definite relationship the elements we know to be present in protoplasm; subjecting them to certain conditions of heat, pressure, light and possibly electricity, in a chemical environment duplicating that of the stage of formation of the first protoplasm, and in a flash producing life; life in a test tube.

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Gonorrhoea in the Female.—A. Samuels (N. Y. Med. Jour., March 20, 1909) thoroughly examines for an existing urethritis all cases with a history of burning and scalding urination. If a urethritis is found, without the presence of a foreign body, we should presume it to be of gonorrhoeal origin. In all cases we institute a thorough treatment, for if a cure cannot be effected complications may be prevented. We employ the vaginal douche only after all traces of the primary infection have disappeared; never in the early stages.

SOME REMARKS ON INFANT FEEDING.*

BY PAUL L. PARRISH, M.D.
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IN my paper this evening I shall endeavor to discuss what I believe are the easiest and most often successful methods of feeding babies, based on my own experience and study of cases. The material upon which I have based my conclusions is partly from private work and partly from dispensary work in the last eight years, together with cases which I have had an opportunity to study and assist in treating at St. Christopher's Hospital.

First: There is no question but that babies which can be nursed should be nursed for from eight to twelve months, if the mother's milk remains good. No one has yet obtained such a generally healthy baby with any other method of feeding; and at the end of the above period, babies usually thrive on any sensible modification of cow's milk, with what additional food they can then have.

When it is impossible to obtain mother's milk for the baby, rational feeding is based on cow's milk, modified in some way, as it is the substance most closely resembling mother's milk that is easily obtainable. Goats' and asses' milk is more closely allied but rarely obtainable.

An analysis of mother's milk shows solids, 12 to 13 per cent.; proteid, .9 to 2 per cent.; fat, 2¾ to 4½ per cent.; sugar, 5½ to 7½ per cent. Sodium chloride, calcium phosphate and other salts. The least variable constituent is sugar, which rarely falls below 5 per cent. Fat varies from 2 to 6 per cent. Protein varies widely and the relative proportion of albumen and casein vary, but usually are in proportion of one to two or three.

Herd milk from cows contains, according to the best and most recent analysis (U. S. Dept. of Agriculture and N. Y. Experiment Station at Geneva): Solids, 12 to 13 per cent.; fat, about 4 per cent,; sugar, 5 per cent.; total proteid, 3.2; casein, 2½; albumin, .7 per cent. Cows' milk is therefore much richer in casein and deficient in sugar as compared with mother's milk. There is also an excess of lime in cow's milk, which probably has something to do with making cow's milk curd harder to digest. The fat is also not quite the same, the globules being larger and the proportion of fatty acids being different. As far as is known the sugar is the same.

I believe that a healthy full-term child who cannot be nursed should be placed on diluted whole milk or diluted top milk, By top milk I mean the upper pint which contains approximately 7 per cent. fat. For the first three or four weeks diluted with boiled water and sugar and then with a dilute decoction of oat or barley water to which sugar is added. I prefer cane sugar as more generally purer than commercial milk sugar and less apt to ferment quickly. The trend of most writers has been not to use cereals till after the fifth or sixth month, but it was proved many years ago, and again recently, that infants under two weeks old have some power to convert starch and that this rapidly increases; the addition of these decoctions seems to make the curd less hard, and has no bad effect.

So much for well babies. Babies who have an acute

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* Read before the Brooklyn Hospital Alumni Association, Brooklyn, N. Y.

indigestion from some cause, if starved for a number of hours and then given very dilute food for a few days can usually go back soon on the regular food.

The cases that we get with a chronic gastritis or gastroenteritis with general bad nutrition and wasting are the interesting cases.

In some of these very bad cases you cannot starve them for several hours or they will die; as soon after they have been starved as long as seems safe, and their vomiting and diarrhoea have been controlled by lavage, saline irrigation and catharsis and a short period of feeding on panopepton or some similar substance or albumin water, the question comes up, on what can they be fed without an immediate return of the bad symptoms?

In my opinion the food that most often best fills the requirements in these cases is plain whey made from skim milk. It contains approximately: Sugar, 5 per cent; albumin, 1 per cent.; fat, .3 per cent. About the same amount of salts as milk and practically no caseine. It should at first be given in small doses frequently repeated. A child of six or eight months or more will frequently retain two ounces given every two hours, and strange as it may seem, gain on this weak food. As soon as it retains and digests this small amount it can be gradually increased till the child is getting an appropriate amount at each feeding, and then many of these cases will make decided gains. If no bad symptoms develop, fat can be gradually added. A convenient way to do this is to add an ounce of 16 per cent. cream (from the top 7 ounces) to a pint of whey, which gives you an increase of 1 per cent. of fat in your mixture. This can be increased gradually as the digestion and general condition of the child improve till you have a 2½ or 3 per cent. fat mixture; when you can usually after a time switch to a more normal food of whole milk or top milk diluted with cereals and with sugar added.

There are some babies that, while they do not vomit on whey or whey mixture with fat, and may make some gain in weight, do have a persistent diarrhoea which is hard to control. In these cases I believe that condensed milk best fills the need of some temporary nourishment. It contains sugar, 50 per cent.; protein, 8½ per cent.; fat about 7 per cent.; four-fifths of the sugar is cane sugar. The diarrhoea will often stop and the baby begin to pick up. The condensed milk beginning, say at 1-20, can be increased up to 1-10 or 1-8 and then fat and barley water can be added as desired till the baby is so improved as to be able to take and retain a better food.

I have looked up the matter somewhat to see if there was any rational explanation of why these foods rich in sugar and poor in fat and protein seem to do so well as temporary food.

According to Chittenden it is possible for the body weight to be kept up and for all the bodily functions to proceed normally on much less protein than has been supposed, as long as there was some fat in the diet and a sufficient amount of sugar, the amount of protein to supposed, as long as there was some fat in the diet and a sufficient amount of sugar, the amount of protein needed to keep up the nitrogen balance was very small. I can see no reason why this should not apply to babies, though in a less degree, as they need more nitrogen than the adult to build up the rapidly increasing tissues.

While I do not believe in the use of condensed milk when fairly good fresh milk can be obtained as an infant's food, I think there is a considerable number of cases in which the mothers cannot be taught ordinary cleanliness, or where they cannot afford good milk, when condensed milk will save the life of the baby. There seems to be no doubt that in exclusive condensed milk feeding there is an increased liability of the infant's developing rickets or scurvy. This can to a certain extent be eliminated by diluting the milk with cereal preparations and the addition of fat and beef juice to the diet.

A considerable number of cases will do well on whole milk or top milk in weak dilution after the acute symptoms of gastric and intestinal disturbance subside, but in these bad chronic cases I think many more do well on either the whey or condensed milk.

I have had an opportunity to watch a number of babies fed on sterilized buttermilk with the addition of cereal decoction added. The composition of this food is about: fat, .09 per cent.; proteid, .75; sugar, 2.38, plus 3 per cent. added.

A few cases improved markedly which had done badly on everything else. The improvement seems to continue only for a short time, from ten days to three weeks, but in some cases where everything else failed it certainly has saved lives, till a better food can be tolerated.

With plain buttermilk I have had almost no experience, having used it in only one case. This little patient was in bad codnition; improved for a few days, then died.

In regard to the patent foods, I can see no reason for a general condemnation of all of them. The fact that there are so many of them with a good sale indicates that we have not yet found anything which better replaces them in general use. I can, however, see no possible excuse for their use when ordinary pure milk can be obtained. They can be used temporarily, as on a journey, with no harm to the child; their continued use is subject to the same disadvantages as the use of condensed milk, predisposing to the development of rickets or scurvy.

Occasionally it will be found that in these serious cases of gastric and gastro-enteric type that even so small a dose of whey as two ounces every two hours will not be tolerated; in such cases an hourly dose of a single ounce may be given and retained and tide the infant over a crisis.

Another point of great value in infant feeding is the use of nutritive enemata, the general impression is, I am sure, that they are only of value for a short time to help provide nourishment when poorly retained by the stomach. If properly used they can be given and retained for a long time; they should be small, non-irritating and predigested and rarely given more than once in eight hours. The nurse should make pressure over the anus for twenty minutes after the administration. Given in this way, I am familiar with one case taking and retaining them constantly for four months, the records of St. Christopher's Hospital show one case having them for eight months. It may be readily seen that the amount of nourishment absorbed in this way may turn the tide in favor of the infant.

I believe that the mechanical procedure which is of the most value in these gastric and gastro-enteric cases is lavage; its good effects may often be seen at once in the cessation of vomiting and the ability to take and

retain more food.

Gavage also is of much value.

Hot saline irrigations wash out the mucus and seem to tone up the colon and often a considerable amount of fluid is absorbed and causes free action of the kidneys.

In conclusion I do not claim to have found the secret of feeding all sick babies, nor has anyone else found it. Most men have the best results with the method with which they are most familiar, and the fact that so many of the really bad cases die in spite of all that we can do for them is a warning to us not to claim too much.

1030 Bergen St., Brooklyn, N. Y.

THE NON-OPERATIVE TREATMENT OF UTERINE DISPLACEMENTS.*

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UTERINE displacements are found in about one-third of all gynecological cases presenting for treatment. This does not include the malpositions which we discover while examining for other than gynecological conditions.

In one thousand examinations that I have tabulated thus far the following conditions were found:

Retroversions	137
Immovable restroversions	77
Retroflexions	21
Immovable retroflexions	8
Anteflexions of cervix	60
Anteflexions of body	23
Anteflexions of body and cervix	4
Dextroverted	5
Sinistraverted	8
Anteflexed retrodisplaced	6
Ventro-suspended	11
Failed ventro-suspended	2
First degree prolapse	3
Second degree prolapse	4
Third degree uteri	11

making a total of 380 malpositions out of 1,000 cases.

ANTEFLEXION.

Sharp flexion will cause pain during the menses without any other cause. The pain results from the blood trying to get around the sharp angle of the canal, thus causing dilatation; there may or may not be an endometritis. The uterine nerves are generally hypersensitive. The cause of the flexion is faulty development occurring at puberty.

Treatment during the menses will consist of rest in bed, open bowels, hot stupes and sedatives. Between periods the patient is gotten into the best physical condition, the nervous and gastrointestinal systems are carefully looked after. A goodly number of cases are greatly relieved and some cured by placing tampons against the anterior lip of the cervix, thus straightening the uterus. Much improvement need not be expected before three months of treatment. Dilatation of the canal by graduated dilators, in the office, is also productive of good results. In dilatation the internal os must be passed, and no more force should be used than in the male urethra. At times one is able to run from the smallest to the largest dilator at one sitting. If this can be done dilate just before the expected period. In many cases it will be impossible to use more than two or three sizes at one sitting. In this class of cases the maximum size is reached just as the menstrual period is due. By the method of dilatation some improvement is noticed at the first menses. The results are better with the combination treatment. The stem pessary is to be used as a last resort, and should never be used in the presence of inflammation, whether of the uterus, its organs, or ligaments. If endometritis be present it should be treated, as well as all other complications. Pregnancy is often a cure.

RETRO-DISPLACEMENT.

Retro-version and retro-flexion will be considered together in their treatment. A version is liable to become a flexion; it is claimed that a version will in time always become a flexion; to this I cannot agree, as my fingers show 214 versions as against 39 flexions. I have seen but two versions become flexions.

A version without tubal or ovarian disease may not cause pain, but it usually causes a fullness in the back with pressure symptoms, and very often occipital pressure or headache. Movable retroversion without symptoms is rare and of recent origin. Long continued displacement means that the bladder and rectum have not their normal position for the performance of their functions. This in time causes symptoms in either of these organs. With the uterus out of position its blood supply is disturbed and passive congestion will occur. Owing to the complications that retrodisplacement causes it should always be treated. The adherent vaviety must first be freed. This can be done by local treatment in a large number of cases. Massage must be used with care lest you set up an acute cellulitis, used carefully, however, it is a valuable agent and it is surprising how many uteri can be replaced. The adhesions must be softened by ichthyol, glycerine, iodine, etc. These adhesions can be broken up gradually while some are no doubt absorbed. The very hot douche is of great assistance.

No case of adherent retro-displacement should be operated until a thorough course of local treatment has been given. Three treatments a week for three months will often bring about surprising results.

With the movable retro-displacements, replace in the knee chest position. Tampon against the anterior lip of the cervix, thus forcing it back and the body forward. Have the patient assume this position at her home for five to ten minutes night and morning. It is best not to fit a pessary at once. Use the tampon treatment for three or four weeks. This reduces the size of the uterus, removes the tenderness, and gives the pessary a better chance.

A well-fitting pessary, in the absence of inflammation causes no pain. Since many of these cases have complications of tubal or ovarian origin, the pessary, of course, cannot be used. In these cases the tampon with ichthol, glycerine, boro-glyceride and iodine has its place. After getting rid of the complications the pessary may with safety be used. A full course of this

* Read before the Long Island Medical Society January 5th, 1909.

treatment will in a large number of cases save the patient from operation.

It is scarcely fair to the patient to say, "Here is a retro-displacement, you must have an operation." If the foregoing method of treatment, viz., replacement of uterus, tampons with drugs, three times a week, hot douches twice a day, when tampons are removed, with a well-fitted pessary after inflammation has disappeared, the necessity for operation will be greatly lessened. Of course, after each menses the pessary is cleaned and replaced. If there are erosions or an endometritis, they are treated at the same time.

PROLAPSE.

This will be considered a displacement in three degrees. First, cervix to the vaginal outlet; second, cervix through outlet up to the isthmus; and, third, whole uterus outside of outlet. There is usually a retro-displacement with the prolapse. It is rare to find prolapse without laceration of the pelvic floor, and of course, cystocele and rectocele.

In the first two degrees with the pelvic floor in fair shape and the uterus capable of reduction in size and weight success will at times be won by local treatment. The pelvic floor must be able to hold tampons for at least twenty-four hours. All tampons must be medicated with tannic acid or some astringent. Under this treatment the vaginal walls can be made to regain some of their lost tone. When all the vaginal soreness is gone then the pessary is used. The soft rubber pessary is useful for a short time, as the rubber cracks and irritates; the hard rubber circular is better. The regular retro-version pessary is very satisfactory. The pessary must be large enough to hold all the vaginal walls within the vaginal outlet.

The third degree of prolapse is less successfully treated locally. In some of these cases operation is refused, and in some it is not advisable, therefore, local treatment must be used. Failure is more common here because there is usually less pelvic floor and it is more relaxed. At any rate these patients can be made comfortable and in some cases the results are excellent. Retention is best maintained by pessary. Those who cannot wear the pessary must be tamponed once or twice a week. The cup pessary does not appear to be satisfactory. Patients who came wearing them were uncomfortable, the skin under the perineal bands was irritated and sore, the vagina tender, and the cervix eroded or ulcerated. After relieving these conditions by local methods, and the pessary replaced, the patient always returned in about a month with the same or a worse condition. The other pessaries are better, safer and cleaner and more comfortable. The cup pessary seems unnecessary for what this will hold up the others will do even better.

1325 Pacific St.

Severe pain, states E. G. Janeway (Med. Rec., May 29) is by no means always hysterical; it is oftentimes due to some serious condition. Pain may be due to toxemia; sciatica may cause pressure of a malignant growth; abdominal pain may come from the kidney instead of the appendix. It requires careful search to learn whether pain comes from the kidney, gall, bladder or appendix; pain or taxia may simulate some of these conditions. Pain in angina pectoris is severe and characteristic; it cannot be mistaken when accompanied by increased blood pressure and ashy lips.

STRANGULATED HERNIA.

BY E. ARTHUR PARKER, M.D.

Surgeon to Williamsburg and St. Mary's Hospitals.

STRANGULATION occurs usually in a pre-existing hernia, as a result of fecal stasis, venous or arterial obstruction existing separately or together.

As in ordinary hernia, the sac may contain any of the abdominal viscera; but most frequently intestine and omentum.

One patient observed by me had only the fallopian tube in the sac; another, an ovary and tube; three, the appendix, and one the bladder.

The point of obstruction is usually at the ring; but as a result of inflammatory changes may occur in any part of the sac.

SYMPTOMS:

The symptoms of strangulation are: Pain, vomiting, constipation, sub-normal temperature.

Pain is most pronounced at the point of obstruction, rhythmical in character, and, as in most abdominal troubles, radiates from the umbilicus. In the interval between the pains the patient may walk around. One of my patients, a little girl aged five, was found sitting on the floor playing with toys. During a paroxysm of pain she would bend over and scream; after its subsidence she would resume playing. In this case operation showed a strangulated diaphragmatic hernia.

An exception to the rule that pain is most marked at the point of obstruction occurred in the case of Mrs. B. She had a left reducible femoral hernia of many years standing, and a recent right strangulated femoral hernia. She had excessive pain and tenderness over the left abdomen; but knew nothing about the condition existing on her right side until her attention was called to it.

Pain in strangulated hernia, as in other conditions, must be valued according to the temperament of the patient.

Vomiting occurs early and is persistent. First, stomach contents are expelled; then mucus and bile; later the vomitus becomes stercoraceous and at times fecal.

Temperature is normal or sub-normal; there is fever when peritonitis sets in.

Constipation is usually absolute, there being inability to pass gas or feces. An enema may bring away fecal matter from below the point of obstruction. Air introduced with the syringe may be expelled.

As illustrating this condition, the following case may be of interest:

Mrs. T., aged 62, was afflicted for twenty years with a left reducible femoral hernia. After over-exertion she could not replace the mass. Several loose movements from the bowels occurred followed by constipation, sub-normal temperature and paroxysmal pain. The sac contained about six inches of omentum and several coils of intestine. This patient was the only one in my series of strangulated hernia whose attack was ushered in with diarrhœa.

In that form of hernia, where only a portion of the intestinal wall is constricted (Richter's or Littres hernia), the bowls may move irregularly at first; but later constipation is the rule.

DIFFERENTIAL DIAGNOSIS:

From Peritonitis.—In strangulated hernia pain is rhythmical; in the interval the patient may walk or play; temperature is normal or sub-normal.

In peritonitis the patient lies in bed with limbs drawn up; there is no desire to leave the bed; temperature is elevated.

From Inflamed Undescended Testicle.—The testicle is absent from its normal location; pain is characteristic.

From Inflamed Gland.—Feel the gland between the fingers.

Illustrative case: Mrs. R., aged 70, was believed to be suffering with an inflamed inguinal gland. Eight hours later, vomiting and paroxysmal pain having set in and no gas or fecal matter having been expelled, gentle taxis was employed. A gurgling sound and the reduction of the mass cleared up the diagnosis.

From Other Forms of Obstruction.—

The symptoms are the same. An examination should be made of all hernial sites. A good rule, "When in doubt, operate."

The following cases fairly illustrate the hernial conditions described above.

In two diaphragmatic cases, one female aged five, one male aged 32. One had been suffering eight days, the other only three. Both had pain and tenderness most marked in the left hypochondriac region. In both the hernia was through an opening in the left side of the diaphragm. Both died.

In a series of sixteen cases of femoral hernia, fifteen were females. The male, aged 62, recovered. One female had the hernia reduced by taxis and now wears a truss. One refused operation, and died on the ninth day. One, a Richter's hernia, was operated on on the 7th day under ether anæsthesia. She died within a few hours. One required resection of 13 inches of intestine. She died the following morning. The remaining eleven recovered after operation.

In a series of six cases of the inguinal variety, all were males. Five recovered promptly after operation. In the sixth case, although strangulation had existed but ten hours, resection of twenty-two inches of intestine was found necessary.

Two cases of umbilical and one of ventral hernia recovered.

Six of the patients operated on varied in age from sixty to seventy-two years. All did well.

In this series of twenty-five operated strangulated hernia patients, all recovered except the two diaphragmatic cases, which should be classed more appropriately under intestinal obstruction. One patient had been suffering with marked toxæmia for seven days when operated, and two whose intestines showed such severe circulatory disturbances as to necessitate resection.

The series shows that with some herniæ after several days' strangulation, the intestine may be replaced with safety; while in other cases a few hours suffice for the presence of gangrene.

TREATMENT:

Gentle taxis may be tried for a few moments; this failing, immediate operation is called for.

Operation is performed to relieve the obstruction and to prevent recurrence.

There are many recognized methods of operating upon herniæ with the object of effecting a permanent cure; but this result seems to depend more upon primary union than the particular method employed.

For inguinal hernia I use a slightly modified Bassini and perform the operation under cocaine-morphine anæsthesia. These patients being worn out from pain, shock and toxemia, certainly have their chances of recovery lessened by a general anæsthetic. The nerve blocking method of Cushing is ably described by Bodine in the Medical Record, October 21, 1905. The nerves supplying the inguinal region are the inguinal branch of the ilio-inguinal, the hypogastric branch of the hypogastric and the genital branch of the genito-crural.

The patient is given whiskey by mouth and hypodermic of morphine 1/4 grain. One-fifth of 1 per cent. cocaine in normal salt solution is the strength used. The skin, the nerve emerging through the external ring, the nerve under the external oblique near the internal ring, the line of incision over the hernial protrusion, the neck of the sac and the margins of the internal ring are infiltrated. Handling of intestine and omentum is painless unless the omentum or mesentery be dragged upon. Hot laparotomy pads placed upon intestine cause no discomfort unless they come in contact with the skin of the abdomen or thigh.

All of my patients did not have complete freedom from suffering under cocaine. In one with a large umbilical hernia I was compelled to complete the operation under a general anæsthetic. Some required more whiskey, and others were given the psychical benefit of inhalations of equal parts of water and alcohol.

Cocaine proved most satisfactory in the following case:

Mr. S., German, aged 65, seen in consultation November 7th, at 9 p. m. Had a lump in the right groin which for many years would come and go; but while working that morning it came down and could not be replaced. It was never so large as at present. He vomited mucus. Bowels constipated. He could pass no gas. Pain is intermittent over the lump, at the navel, and all over the lower abdomen. Temperature 97, pulse 110. There is a very large tense and tender scrotal tumor. Urine, 1030; albumin, no sugar. Operation 11.30 p. m. The technique as previously described was followed: During the entire operation, which included the removal of six inches of omentum, we heard his only complaint when the first needle puncture was made in the skin. We used two ounces of whiskey, 1/4 grain of morphine and one grain of cocaine.

262 McDonough street, Brooklyn, N. Y.

Borderland Cases of Insanity.—A. W. Ferris, president of the New York State Commission in Lunacy, recently observed at the annual meeting of the American Medico-Psychological Association in Atlantic City that while the annual death rate in the State hospitals for the insane is 8 per cent. of their population, 40 per cent. of all the deaths occur during the first year after admission, and 15.6 per cent. of the new cases die during their first year of residence in the hospitals. A few of these are aged or bedridden, many suffer infection, exhaustion, psychoses, many are in a condition of dread, antagonism, confusion or enfeeblement which constitutes a barrier to early access to their personality. If brought more promptly into reception wards they would, in many instances, never have progressed so far, and the recovery of many would have dated from an early period. The borderland case must be put under treatment, including all care in its incipiency. The medical care of the insane should begin before the time when a committment is possible. The opening of the State hospitals to voluntary admissions offers a chance to save many from death, and to rescue many from permanent insanity.

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THE EMMANUEL MOVEMENT.

THE pendulum of medical thought is liable to swing too far from the center of common sense. At the beginning of the Emmanuel movement for the psychic treatment of disease by church authorities, we expressed the opinion that medical examination even by the best physicians might not, in a brief interview, detect either physical lesion or a dangerous degree of mental alienation so that, on the one hand, psycho-therapy might be applied to cases requiring more definite treatment, and, on the other hand, that sexual paranoiacs or persons with sufficient alteration of mentality to require confinement, might cause serious trouble when treated by prayer and clerical supervision. We expressed ourselves emphatically against the practice of hypnotism by anyone but a qualified physician and even by the latter unless under peculiar circumstances.

During the last few months, at least two clergymen interested in the Emmanuel movement have had to take vacations on account of the nervous state into which their exertions had brought them, and physicians who backed the movement have materially qualified their endorsement of it. We have heard hints as to some disastrous cases, which might better have received old-fashioned treatment.

As we pointed out when the first wave of enthusiasm over this method passed over the country, sympathy is about the worst thing that a neurotic person may receive. Religious comfort, applied in an ordinary, informal way, is quite another matter. Many persons would undoubtedly be benefited by rebuke for selfishly yielding to neurotic tendencies.

To put the matter in crude language, the Emmanuel movement was a substitute for Christian Science, and, like most other substitutes, has not proved as good as the original. It has been said that Christian Science is neither Christian nor scientific. The Emmanuel workers were the former in every sense and their backing was scientific in spirit, though perhaps misguided. Thus the substitute could not twist the semblance of religion into any shape necessary to cover the ills of a perverted imagination nor could it entirely ignore the real basis which supports many neurotic states. There is no religious dogma nor matter of fact which Christian Science cannot shift to suit its ends, nothing so tangible that it cannot declare it to be intangible. It has the advantage of starting with the most absolute authority —absolute because self-assumed—and with the blindest faith. From the standpoint of results, no other cult, no method of suggestion, no species of crude charlatanism can so successfully dispose of a purely imaginary ailment or of the subjective symptoms of a real lesion or perversion of physiologic function.

There were several fundamental errors in the Emmanuel movement. One was that a physician could distinguish at a single examination between organic and functional derangements and between those functional derangements that are genuine and definitely physiologic and those that are imaginary. Another was that an examination could cover all necessary diagnostic methods. Still another was that any physician is sufficiently "eminent" to cover all fields of medical art and science. Without mentioning the various elaborate analyses necessary to be sure that a case is suitable for purely mental and moral suasion and the rather frequent occurrence of cases in which an organic lesion fails to be easily apparent, it is obvious that the class of cases that would apply for psychic treatment, is peculiarly apt to include bizarre forms of mental aberration, especially those in which there is a recondite and exceedingly dangerous sexual perversion or criminal tendency.

From the ministerial side, there was the error which made some of the medical hearers gasp with surprise, that a non-medical man should assume the privilege of hypnotic suggestion as a means of therapeusis. Most neurologists are agreed that the subserviency of one will to another, implied in hypnotism, is an exceedingly dangerous condition, and that hypnotism is justifiable only in the most exceptional cases.

A further error is included in the primary idea of organized, and even class treatment of functional troubles. There is no group of patients in which individualism and the avoidance of formal recognition of the neurotic taint and the machinery of suggestive therapeutics, is more necessary.

When we pause to analyze these various errors, we see that they are essentially a unit. The Emmanuel movement started out with the idea of using a man and an institution for something else than that for which they were designed.

RUSTING OUT.

VERY frequently, when a man in active business or professional life dies at an advanced age, the remark is made that it is wonderful that he could have held out so long in spite of the fatigue of his labor—"which would have killed a younger man," etc.

Or if a man similarly occupied, dies after passing the time at which he might decently have retired, but without reaching the psalmist's limit of life, it is just as commonly remarked that if he had only been able or willing to leave the work to younger men, he might have enjoyed life for so many years longer.

We recall an instance in which a man not much past middle life and who could easily have passed himself off for forty-five or fifty, instead of sixty, died as a result of long standing hepatic disease whose manifestations, however, had been very vague. All of his friends regarded him as a sacrifice to his work and the minister who preached his funeral sermon dwelled long and lovingly on the idea that, at last, he had attained the rest for which he had long yearned.

Now, as a matter of fact, he died just at the conclusion of a long vacation; his work was not especially arduous, and, with increasing years and success, it had not only become a greater and greater source of pleasure and comfort to him, but he had so systematized it that it presented very few details which caused him fatigue or anxiety. So far from yearning for rest, he had always been ambitious and active and his last conscious thoughts had been a pleasurable anticipation of resuming his routine. From a professional knowledge of the case, it may be safely said that his occupation had had nothing whatever to do with his disease, although it is possible that if his income during his early life had been greater, he might have been better able to adopt prophylactic measures against the trouble which ultimately killed him.

As a contrast to this case, we recall that of another gentleman, of about the same age, who at forty retired with a competence. He was not what was considered a wealthy man, even for those days, but still had an income apparently assured and sufficient to maintain him in comfort indefinitely. He had no bad habits, he was in good health and there was nothing particular to cause him anxiety. But he had nothing to occupy his attention, his investments were able almost to take care of themselves and he had no hobbies. Without any very obvious reason, he became a dyspeptic and, while not irritable nor disagreeable, he gradually became an invalid, centered his interests largely in his symptoms and began to realize that he was out of the race. As time passed, interest rates dropped lower and lower, poorer relations leaned more and more heavily upon his supposed resources until, at the age of sixty, he was virtually compelled to re-enter business life, not as an active, self-controlled manager, but on a moderate salary. He was unused to the routine, the contrast between his present state and either of his former ones, was naturally unpleasant and he soon succumbed to general arteriosclerosis and renal disease.

We recall a third case, that of a considerably younger man, though still over forty, who was ordinarily supposed by strangers to be about thirty. He was active both as a responsible business man, in social life, and, while not an athlete, nor muscular in the ordinary sense of the word, possessed great powers of endurance, both in regard to loss of sleep, mental effort and locomotion. As a boy, he described himself as not worth raising, and was in delicate health till he was thirty. He had suffered the pangs of poverty while occupying a position that compelled him to keep up appearances, his work had been responsible and trying and was divided between his proper vocation and the nursing of investments requiring much attention, great anxiety, and a kind of work for which he was not naturally fitted. He had also had a most trying domestic life. His own explanation of his youthful vigor and freedom of the ordinary marks of care was highly unscientific. He said merely that he had made up his mind to keep young and repeated the old joke that a certain number of fleas are good for a dog, to keep him active.

In contrast to this case, we know a considerable number in which active young men have settled promptly into fairly profitable and easy positions, have dropped into a comfortable domestic life, have abandoned sport and have become sedate and sedentary middle aged men, incapable of getting out of their rut or of initiating or carrying on any task requiring strenuous mental labor, or of enduring any physical hardship. Even socially, they have become "dead ones," and their faces are seamed and their hair has whitened or fallen out prematurely.

There are strange differences in the way in which men and women mature and grow old. Some seem to have no middle age. They are youthful in their habits of mind and body until, suddenly, they grow old and die. Others have a very brief period of youth, a long, monotonous middle life, and then we say they die prematurely, before they have become old, as the result of protracted labor.

So far as we can judge, the men and women who play the most—excepting, of course, the leisure class who really have no serious function in life—are usually the ones that work the hardest, at least in the sense of performing the really difficult tasks which attack new problems and accomplish something for the world at large. On the other hand, the men who accumulate the most wealth, usually concentrate their whole attention on their work and keep a monotonous system well oiled,

to grind out dollars for themselves which they do not know how to use, even for their own selfish enjoyment.

But both these latter kinds of workers seem to have the ability to hold onto life better than those who get into an easy routine or who retire early from active employment. Moreover, when we examine the case histories of the men who are killed by work, we often, perhaps usually, find some other factor, perhaps an early syphilis or alcoholic indulgence, bad hygiene, which has no necessary connection with their occupation, imprudent exposure or mere accident.

Is it not time to change our views as to the wearing effect of labor, and to lay more stress on the accumulation of rust?

WISE OLD-AGE PENSION MEASURES.

THE Massachusetts Legislature has, at the request of both company and employees, passed an old-age pension bill affecting the Boston & Maine Railroad. It is indeed most gratifying to note action so enlightened and so essentially humane on the part of a great corporation; here at any rate is a soul-endowed institution. Both employer and employees are to contribute equally to the proposed pensions—the former to make up any deficiency if the joint payment falls short of $200, the minimum sum. The company has, moreover, promised to make any additional contribution to meet the needs of those already advanced in years; and provision is made by which regular pensions may be eked out by annuities voluntarily purchased by employees. The pension system is to be managed by a board of trustees in which the railroad and its employees are equally represented; and it cannot be put into operation until adopted by a vote of two-thirds of the employees. Once established, states the *Evening Post*, the scheme creates legal rights practically binding on all the 27,000 employees as well as on the railroad; while the State aids by supervising the system and exempting from all taxation the funds which are to be guarded by both the insurance commission and the State actuary.

It is believed that this notably beneficent plan may be extended to include accident insurance and sick benefits. Indeed, it is possible there may follow a general law under which other public service and private corporations may put into operation a co-operative old age pension system. Such plans as these obviate unnecessary direct aid from the State; and this we cannot think but wise and just to the community at large. Why *all* classes of citizens (among them we emphasize doctors) should be mulcted for the provision of old age pensions intended to be enjoyed by only *a portion* of the people, is a thing difficult to comprehend upon any just principles of government. And in England where such mulcting has now been established by act of Parliament, where the Government has taken upon itself to pay old age pensions out of its treasury, much indignation and dissatisfaction is naturally forthcoming. It is all very well for a government to be paternal; but no government can be paternal—that is, in the sense here used, can provide for any one part of its people—without taking the money out of the pockets of the rest. Germany is also assuming this function—it was, indeed, the first to take such steps. But in the Massachusetts legislation, as has been seen, no expense of the pensions is assumed by the State; this is put entirely where it belongs, upon employer and employee.

THE GLORIOUS FOURTH.

THE Bulletin of the New York State Department of Health wisely advises health officers throughout the commonwealth to apply in good time for immunizing doses of tetanus antitoxin so that physicians may in emergency procure it at once. Such immunizing dose, it is emphasized, is an almost certain means of preventing tetanus infection and intoxication; it would seem that no well-authenticated case of lockjaw has developed in the United States among those who have received such dosage. Tetanus antitoxin, indeed, is most useful as an immunizing, rather than as a curative, agent. The tetanus mortality throughout our country has indeed been greatly reduced within several years past; and this largely through the development of the tetanus serum and the warnings given in medical journals. For example, the national celebration of 1903 resulted in 406 deaths from this cause alone; in 1908 there were only 55 deaths. The celebrations of the last six years showed for the whole country a grand total of 29,296 killed and injured. The cheerful yearly business of inducing the eagle to scream and of twisting the lion's tail up into knots has certainly been fraught with dreadful losses in suffering and life. However, we are beginning to be more enlightened, to understand that we can celebrate quite heartily without the accompaniment of maiming and premature death. Baltimore, for instance, has an ordinance providing that "no person shall cast, throw, or fire any squib, rocket, cracker, torpedo, grenade or other combustible fireworks or explosive preparation within city"; and further that none of these explosives shall be made in the city. There were ten accidents in Baltimore last Independence Day; Philadelphia, on the other hand, full of lofty and unshackeled patriots, had her pride satisfied to the extent of 432 killed and injured. At least half a dozen other American cities have ordinances similar to Baltimore's; and in none of these cities were there any deaths from tetanus after the Fourth.

A year ago we set forth the dangers, the value of the lesion and the mode of toxic generation in tetanus. The bacillus is anaerobic, thriving in closed wounds, devoid of oxygen. It does not itself traverse beyond the site of an injury, nor does it enter the lymph and blood channels; the toxins which it generates are the virulent factor. Its habitat is mostly earth, and sometimes in purifying fluids and manure. The infection generally occurs through the introduction of impregnated dirt into wounds—sometimes very slight, especially of the hands and feet. Most cases of tetanus which begin their incubation on Independence Day come about through the discharge of powder, especially from blank cartridges; half of the remainder are due to giant fire works. The traumatism serves also to introduce germs accidentally present on the skin; as may be readily understood when we consider the normal condition of the average small boy's hands. The wound may seem but a mere burn; it may appear quite superficial—yet some part of it may at once become impermeably sealed. Punctured, contused or lacerated wounds are much more dangerous than such as are clean cut.

WHY COLLEGE WOMEN DO NOT MARRY.

IT occurs to us that there is a very simple explanation of the admitted fact that a relatively small proportion of college women marry. We have read many articles on the subject, some frivolous, some scientific, some statistic, others not. We grant that a very respectable percentage of female college graduates do marry and that they make good wives and rear considerable families. Still, it is admitted by all that, on the whole, fewer women with baccalaureate degrees marry than of corresponding series of women without so high an education. Various explanations have been offered, such as the greater age at which college women enter society, the awe which men feel of their attainments, their relative inaccessibility in college or in the teaching positions to which a good many of them aspire.

None of these factors seem to us adequate. Take the individual case of a girl of 18 or 20, or even more, who would rather go to college, especially a college limited to women, than to lead a simple home life or enter into society or engage in some occupation which does not materially interfere with domestic and social life after business hours. Is it not a reasonable conclusion that such a girl cares less for domestic life and the ordinary forms of social life? This does not imply that the girl who can go to college but who does not has formed a deliberate plan of matrimonial conquest, nor that the college girl is unfitted in any way for matrimony. But, when we multiply the individual case by a thousand, we are dealing with a class of women who are relatively less likely either to attract or to be attracted by a prospective husband. If there were no colleges at all, the same class of women would still be less apt to marry, though probably more of them would do so, merely because they could not follow their proclivities and because they would necessarily be thrown more into general society during the four-year period in which the majority of matches are made.

Medical Times, July, 1908.

A GREAT SCIENTIST.

IT would be difficult indeed to state with which science Francis Galton has been identified; for the reason that he has shone with equal brilliancy in many scientific fields. Our present age is the age of specialization; any one among us would be content to be known as a chemist, a physiologist or a clinician; science has become so multivaried that no one now aspires to comprehensive knowledge in more than any one of its divisions. But Galton is perhaps the last of the great nineteenth century giants—Huxley, Spencer, Darwin, Tyndall, Farraday, Agassiz, Shaler — men whose scientific grasp was amazingly cosmic. To give a notion of such scope among our immediate forbears we set forth but an incomplete list of the activities in which Galton has been intimately interested, in some of which indeed his has been the creative spirit. This great man, now in his eighty-sixth year (may he never know the odor of chloroform), has been a meteorologist, a geographer, an explorer, an educationalist, a mechanical inventor, an anthropologist, a statistician, an experimental psychologist, an authority on heredity, the founder of the science of "evgenies" and of the "finger-print" method of identification. Galton has even evinced the insatiable curiosity of the born scientist, to whom no detail is insignificant, for whom no scheme is too vast to undertake. He enters with equal zest on a proposal to initiate the Dakota Indians' plan of distinguishing each year by a medallion symbolizing some principal event in it, and a proposal to call into existence "races of highly gifted artists, saints, mathematicians, administrators, mechanicians, etc."; * he is as intent when composing a memoir on "cutting a round cake on scientific principles" as in considering "the relation between individual and racial variability."

Our chief interest in Galton lies in the fact that he was intended by his parents to enter the medical profession; he was to have followed in the footsteps of Erasmus Darwin and his celebrated son, Dr. Robert, the father of the illustrious evolutionist, Charles. At six-

* "Memories of My Life." Published by Dutton, New York City.

teen he went traveling in charge of Bowman, the oculist of "capsule" fame. Soon after, however, Galton's father died and left him a considerable fortune, upon which he at once gave up the plan of practicing medicine, though "most grateful for the enlarged insight into nature that I had acquired through my medical experience." In this our profession undoubtedly sustained a misfortune; a genius was lost to medicine, though science in general was the gainer. A valuable lesson which our colleagues just graduated may glean from Galton's career is contained in his reflection how the growth of his mind was influenced by circumstances, and the most influential of these was a constant intercourse from boyhood and all through life with men of first-rate ability. He believed strongly in the benefits of such companionship (which, as we have seen, was in his earlier years largely with physicians).

HUMAN AND ANIMAL DISEASE.

IN our February issue we laid before our readers matter descriptive of Foot and Mouth Disease; and we sketched the mysterious outbreak of cattle plague in the United States which has been obtaining for nearly a year past. The Bureau of Animal Industry of the Department of Agriculture at Washington and the Marine Hospital and Public Health Service have co-operated in an investigation which shows that the untoward events began with some calves that were being used for the preparation of vaccine virus; the cowpox serum employed in that work was imported—the official report does not state from what country. Some of the same article and samples of the product made in this country from it were obtained by our government experts; both were tested by inoculating several cows and sheep, with the disconcerting result that foot and mouth disease was in every instance developed, though virus procured from other sources failed to produce that effect. It was thus evidenced that two of the preparations tried had been impure. Prompt measures were then taken, with the gratifying result (so the Bureau of Animal Industry assures us) that no vaccine serum contaminated with foot and mouth disease is on the market to-day. There have in other years been outbreaks of a similar nature; as in New England in 1902, the contaminated serum having come from Japan. Both in Italy and in our Western States, harm has resulted from the use of diphtheria antitoxin; as soon, however, as the unfortunate effects were discovered the faulty serum was called in by the manufacturers. The antitoxin in this country, by the way, was prepared by a local board of health, and not by a proprietary house.

There thus arise some serious considerations upon the value of and the possible drawbacks to, serum therapy. It is obviously necessary to discriminate as between man and animals in the use of sera in the treatment, prevention or detection of disease. Our two most valuable sera are the smallpox vaccine and the diphtheria, both now derived from animals, at least in transit; it would be difficult indeed to mention any two boons as precious as these to humankind. We seem to have added to these a meningitis antitoxin, also evolved through animal experimentation. We make no doubt that an ideal tuberculin will soon be evolved, in which process the lower animals will again impose a debt upon us. How essential is it, therefore, that the creatures which are here pressed into service shall be absolutely free of disease. We believe that prophylactic and curative sera (though the efficacy of all of them is not yet fully established) will become a most potent part of our therapy; but such establishment is not yet assured. And in the meantime the workers in this beneficent field have to bear a great deal of detrimental and occasionless criticism on the part of the irresponsible and the hysterical. It behooves us then (if for no other reason than that our experimenters should be left free and unembarrassed to perfect their achievements) that every contaminating feature be eliminated from the work in which animals are used. Fortunately (and rather curiously, too), in the instances here noted, the human beings seem to have been little harmed. It is for physicians and veterinarians, each in their own field, to scrutinize all bacterial preparations in order that serious accidents may not ensue.

Postural Lung Dulness.—A. Abrams (Med. Rec., April 3, '09) considers "atelectatic zones—circumscribed areas dissociated with any demonstrable lesions, varying from a quarter to a silver dollar in size and disappearing after a deep inspiration or on application of the lung reflex test. These zones, even in apparent health, often yield dulness or flatness on percussion, and are frequently mistaken for consolidation; they are definitely related to the points of election and the paths of distribution of the lesions in chronic pulmonary tuberculosis. Sometimes the lungs are hyperresonant, presenting essentially the signs of emphysema consequent in acute lung dilitation," which Abrams holds to be a pulmonary neurosis. These conditions disappear on cocainizing the nasal mucosa. Lung dulness is influenced by posture; and it is pathological. It is to be distinguished from the dulness of atelectasis; the latter is usually circumscribed and may be dispelled by a series of forced inspirations, by rubbing the skin over the area of dulness to provoke the lung reflex of dilitation and by the cocain test. Postural dulness is usually diffused; it can be dispelled by the means here stated, but it disappears upon a complete change of posture; Abrams regards it as due to the blood normally present in the pulmonary blood vessels, which is influenced by gravity. This dulness is most pronounced in passive congestion, and is noticed slightly in pulmonary tuberculosis. Abrams believes postural treatment of the lungs to be justified.

BIBLIOGRAPHICAL

Treatment of the Diseases of Children.—By Charles Gilmore Kerley, M. D., Professor of Diseases of Children in the Polyclinic Medical School and Hospital; Attending Physician to the New York Infant Asylum and Maternity, etc. Second edition, revised. Octavo, pp. 629. Price, $5.00. Philadelphia and London: W. B. Saunders Company, 1909.

This work, prepared for the general practititioner, has met a positive want. It deals with modern methods of management of patients, in greater detail, than has been attempted in other similar works.

The means and methods suggested are not drawn from the literature, but are based upon the actual extensive experience of the author. The book is highly commended to the clinician.

Diet in Health and Disease.—By Julius Friedenwald, M. D., Professor of Gastro-Enterology in the College of Physicians and Surgeons, Baltimore, and John Ruhräh, M. D., Professor of Diseases of Children, etc. Third edition, thoroughly revised and enlarged. Octavo, pp. 765. Price, $4.00. W. B. Saunders Company, Philadelphia and London. 1909.

This is a practical handbook for the everyday use of the clinician. The articles on milk and alcohol have been re-written, and additions made to the articles on tuberculosis, the salt-free diet, rectal feeding, the caloric needs of infants, and others too numerous to mention. Several useful tables, showing the caloric value of foods, have been added, as well as Winton's valuable table showing the composition of diabetic foods. There is also a short account of the simpler methods used to detect certain food adulterations and preservatives. The book will be found useful, and well worth its cost.

Dietetics for Nurses.—By Julius Friedenwald, M. D., Professor of Gastro-Enterology in the College of Physicians and Surgeons, Baltimore, and John Ruhräh, M. D., Professor of Diseases of Children, etc. Second edition revised and enlarged. Octavo, pp. 395. Price, $1.50. Philadelphia and London. W. B. Saunders Company. 1909.

This little book has been well received. The principal change in the present edition is the re-writing of the article on milk, and the addition of a chapter on the simple methods used in the detection of certain food adulterations and preservatives. The book will be found suggestive and useful.

Saunders' Question-Compends.—Essentials of Medical Chemistry, Organic and Inorganic, Containing also questions of medical physics, chemical philosophy, analytical processes, toxicology, etc., prepared especially for students of medicine. By Lawrence Wolff, M. D., formerly Demonstrator of Chemistry, Jefferson Medical College, etc. Seventh edition, revised by A. F. Witmer, Ph. G.,, M. D. Philadelphia and London. W. B. Saunders Company. 12 mo., pp. 225. Price, $1.00

The fact that over 275,000 copies of these unrivalled publications have been sold, is sufficient evidence of their value as self-helps to students and physicians. All these compends are kept thoroughly abreast of the times.

American Pocket Medical Dictionary.—Edited by W. A. Newman Dorland, A. M., M. D. Containing the pronunciation and definition of all the principal terms used in medicine and the kindred sciences, along with over 60 extensive tables. Sixth edition, revised and enlarged. 12 mo., pp. 598. Price, $1.00; with thumb index, $1.25. Philadelphia and London. W. B. Saunders Company. 1909.

This little book, which we highly commend, is constantly growing in favor, and the present edition shows special effort in reflecting the advance of medical literature. The text has been fully revised, and many hundred new words have been added. Most of these words are not to be found in any other book of its class.

Myomata of the Uterus.—By Howard A. Kelly, M.D. Professor of Gynecology in the Johns Hopkins University, etc., and Thomas S. Cullen, M. D., Associate Professor, etc. Illustrated by August Horn and Hermann Becker. Large octavo, pp. 723. Price, $7.50.

This great volume by eminent authors, deals almost exclusively with work done by those connected with the gynecological department of the Johns Hopkins University. The text is based upon original research, and as such, is an addition of great moment to this subject. The illustrations are superb in every way. The gynecologist will find this work of immense interest and service. The book should be seen to be appreciated.

CORRESPONDENCE

A PLEA FOR MEDICAL UNITY.

To the Editor of the MEDICAL TIMES:

Excepting in the general sense of a desire for harmony, a plea for medical unity in the State of New York, amounts to an invitation to homoeopaths to drop their formal organization and to enter that of the other physicians, variously known as "Regular"—a term unintentionally implying some degree of irregularity in others—"Allopathic"—which the men so designated resent as incorrect—"Old School," etc. Since the reunion of the New York State Medical Association with the Medical Society of the State of New York, the only physicians of sufficient numeric importance to be considered in a plea for unity, are the Homoeopaths, of whom there are 931, as compared with 12,784 of the "Regulars."

It is true that there are 292 Eclectic graduates. Many of these are enrolled in the ordinary, unspecified medical organizations and, so far as so-called eclectic organizations exist at all in New York, they practically represent the staffs of advertising medical institutions, they do not correspond at all closely to the designation of the schools of graduation and, for obvious ethical reasons, no plea for unity is entered with regard to men thus affiliated. Likewise, unity with persons practicing various peculiar therapeutic methods, such as osteopathy, Christian Science, etc., is out of the question.

To put matters plainly, and in approximate percentages, for every 91 doctors of medicine already actively or potentially members of the various State and county medical organizations, there are about seven who are more or less actively connected with Homoeopathic organizations, who are following exactly the same professional precedents, whose interests and influence in regard to hygienic and sanitary matters are practically identical and whose ideas as to therapeutics we do not

believe to be sufficiently different to separate them from us of the other 91 per cent.

Without entering into an extended biographic sketch, it may be of interest to note that Samuel Hahnemann was born in 1755 in Saxony, that, after a youth of poverty, he secured a university education by dint of hard work, graduated in medicine at the age of 24 and practiced according to the generally accepted beliefs for several years. He then retired because he was disgusted with the results of the medical practice of that period—although his enemies say that he made a failure of it. After several years, he came to light again with the announcement of new principles of medicine, which were more elaborately presented in 1805 and perfected in the "Organon of the Healing Art" in 1810. He died at the age of 88.

Without reference to the truth or falsity of Hahnemann's dogmas, we must admire the perseverance and magnetism of the man. It is unfair to say, as some have, that he plagiarized from earlier sources, for he himself referred to these sources for the purpose of supporting his views, and no one can be so original as to ignore the past. We must also give him credit for helping to bring about a more humane and rational treatment of the insane and for insisting on a close study of the action of drugs, although in the light of modern science, we see how auto-suggestion led to imaginative results in drug proving. It must be admitted, also, that "allopathy" was a pretty fair characterization of the medical practice of the eighteenth century and that any protest against the tremendous doses, indiscriminate blood-letting and other heroic measures of that period, was of advantage, whatever we may think of the substitute offered.

Hahnemann's itch-mite theory, however ridiculous it appears to-day, must be recognized as a crude forecast of the germ theory of disease. His attempt to bring all therapeutics under one rule—simila similibus curantur,—is an expression of a tendency toward unity of effort which we have not yet entirely outgrown. His conception that the spirit of a drug could be extracted by trituration or solution was also in keeping with the general credulity and superstitious notions of the age and scarcely to be wondered at when we reflect that very little was known of chemistry and that, in particular, the vaguest ideas as to active principles must have prevailed until they were actually isolated as ponderable substances.

Modern physicists have calculated the approximate maximum and minimum size of the molecule. The thirteenth or fourteenth centessimal dilution of a drop would contain one molecule of the original substance in a volume of diluent somewhere between "that of a fine shot and a cricket ball." Thus it is obvious that the higher dilutions recommended by the "high potency" homoeopaths would actually represent in a vial of pills, a large number of blanks and one pill containing one molecule. This fact was, of course, unknown to Hahnemann and some of his successors, but it only illustrates how far the pendulum had swung from the opposite extreme of overdosage.

Even comparatively modern drug lists of homoeopathic medicines contain very funny and very nasty drugs. But the same criticism may be made of the older practice of medicine and, even to-day, there are a good many remedies in common use which do not appeal to aesthetic patients and, both as to proprietaries and officinal drugs, we are rapidly placing many on the useless list.

The writer believes, to a certain extent, in sectarianism. That is to say, for politics, religion, medicine, or anything else, he believes that any man who conscientiously holds views widely different from the ordinary, might better be in a corresponding organization. In this connection, it may be well to point out that there are a number of instances in the history of the world in which a small minority has eventually proved itself to be in the right and an error of judgment as to a question of fact does not necessarily indicate a lack of reasoning power.

If, therefore, the writer believed that the typic homoeopath of to-day literally adhered to the various theories of Hahnemann, he would feel that unity with the general medical profession would be unwise. For that matter, he would scarcely favor the admission of Hippocrates, Galen, Paracelsus and similar famous physicians of antiquity to modern medical societies, were they in the flesh and adhering to their recorded methods of practice. But as a matter of absolute fact, the writer does not believe that any considerable number of homoeopathic physicians do adhere at all literally to the teachings of Hahnemann or that their actual methods of diagnostics or therapeutics warrant the material loss of influence and weight which the maintenance of separate organization entails. It must be remembered that medicine has approached the standards of scientific accuracy very rapidly in the last two generations and that we are farther from the standards of the days of Hahnemann than was that period from the time of Hippocrates.

Moreover, prejudice has given place to tolerance almost within the memory of men still living. In these days, we can scarcely imagine one upright, moral man, consigning another of the same class but different theology, to everlasting punishment on account of that difference and, even if he did, he would enjoy his society in this world. Thirty or forty years ago, a physician meeting one of the supposedly opposite school at a reception said to him, "We meet on neutral ground to-night," and he was so obviously sincere as to be offensive. At present, the remark could scarcely be understood by anyone except as a joke.

Even twenty years ago, the plea for unity which this article embodies would have been met by many old-school physicians by the "fool or knave" argument. To-day we are very chary of calling a man a fool because he does not believe as we do. Very few of us who have lived any length of time, have been able to keep all of our opinions unaltered and we have seen a great many seemingly absurd ideas develop into practical utilities.

The very rapid acquisition of new facts and discarding of disproved ideas which we thought were facts has outdistanced the evolution of organizations. Churches, political parties and various other institutions have outgrown their dogmas, platforms and constitutions. Some have changed their creeds to suit their present beliefs, others have not quite reached this point. In other words, most of us are knaves in the sense of belonging to some society or other that purports to believe what it does not, at present, literally accept. We realize, therefore, that the homoeopathic physician, like ourselves, was directed to a homoeopathic school at an age

rather young for mature judgment and at a time when, obviously he was no more able to decide as to matters of medical fact than we were at the same period of our development. We realize that, like ourselves, he went in a certain direction largely owing to lay allegiance to a family doctor. We realize that when one comes up against a hard fact that our preconceived notions cannot surmount, he has to change the direction of his course. We realize that a school or institution does not commit suicide or even change its name, simply because it has changed its ideas, any more than an individual does. Thus, there are very few physicians left who would call a Homoeopath a knave because, with the gradual but inevitable accumulation of experience and change of detailed methods, he does not scratch out the word Homoeopathic of Hahnemannian, from his diploma or abandon an insistent practice to get another diploma.

Therapeutics plays a much smaller part in medicine than it did a generation or two ago and drugs play a much smaller part in therapeutics than they did at that time. Furthermore, actual scientific experiment and the more objective and sceptic deduction from clinical experience interpose harder facts between us and our preconceived ideas than formerly. Is there any longer the actual, practical difference between the generality of physicians and the Homoeopaths to warrant a continuance of the separation? The 91 men in a hundred would be materially stronger if they had the seven with them and would not the seven be stronger too? If the medical profession could say to the laity, "We are united on all essentials, there are none missing from our ranks except those who voluntarily choose unprofessional methods," think of the enormous increase of our prestige in securing legislation for the good of the community, in discouraging quackery, in drawing a contrast between medicine as an art and various one-idea methods of healing, such as osteopathy and Christian Science. It is no exaggeration that the precedent for Christian Science proselyting and for special legislation in favor of osteopathy, optometry, etc., has been the separation of the Homoeopathic school of medicine. Indeed, so far as the writer's personal observation goes, in his native town, Christian Science has developed from the nucleus of the old homoeopathic clientele because it wanted something out of the ordinary and because there was no longer the sense of supporting a martyred cause or of getting something unusual by adhering to the modern, broad gauge homoeopaths. The writer believes, too, that nine-tenths of the use of quack medicines is due to the lay belief that the medical profession is uncertain as to its opinions and that the only tangible basis for this belief is the existence of a separate homoeopathic organization.

Here are pressing, practical arguments for immediate action. They are arguments that appeal equally to "Regulars" and "Homoeopaths." It is not that the additional dues of seven men are needed in a society of 91, nor that seven average men if wise can add materially to the general fund of knowledge of 91 average men, nor that seven men even if we take the old-fashioned illiberal view of their lack of wisdom can do much harm in the statistic sense, nor that the votes of seven men can balance those of 91. We need to get the 91 and the seven together because of the apparent—and we believe only apparent—existence of a respectable minority, of a distinct and conspicuous if numerically small dissenting opinion, of a precedent for a most dangerous and far-reaching sympathy for the under-dog of all sorts of breeds, that is constantly appealing for sympathy simply because it is the under-dog, without regard to its respectability or integrity and which, in every issue in which the medical profession is especially interested, pleads the analogy of the old-time persecution of homoeopathy.

A. L. Benedict, A. M., M. D.

Buffalo, N. Y.

DIFFUSIBILITY OF THE ELEMENTARY GASES.

To the Editor of the Medical Times:

Several months ago the Medical Times published an article for me calling attention to the ready diffusibility of the elementary gases through animal tissues and their marked influence upon disease. By a series of experiments upon inoculated animals and culture media I was able to demonstrate most conclusively that many of the pathogenic micro-organisms or bacteria and their toxins were quickly destroyed by slight changes in the proportions of their gaseous environment though showing marked resistance to even great extremes of temperature, heat or cold, and have only lost their virulence when subjected to drug antiseptics of too great strength to be practical of obtaining in the human tissues. Micro-organisms or bacterial life may well be classed as a chemical existence; have we not long observed the importance of what we term pure fresh air (the proper proportion of Oxygen, Nitrogen, etc.) as the principal factor in the non-existence of the microbes of disease. I am prone to look upon the hydrogen atmospheres such regions as where decomposition of organic matter is taking place as the most suitable environment for the generation and existence of the micro-organisms of disease. There are regions where we note the Hydrogen in great excess, so much so that although there may be a large amount of water H_2O, the Hydrogen is yet in such excess that it is constantly being liberated as Sulpureted Hydrogen, Carbureted Hydrogen, etc., in the low lands and swamps of the coast and the tropics, the Jack-o'-lantern of neglected battle fields and burial grounds in times of pestilence. The endemic nature of malarial fever at low levels and its disappearance at even slight elevations of thirty or forty feet should reveal the fact as to what slight changes in its elementary gaseous environment this microbe at least is influenced. The human animal thrives to the greatest advantage in an Oxygen and Nitrogen atmosphere, the pulmonary system taking care of the Oxygen and the skin or body surface a vast field constantly bathed by a mixture containing 78 parts to the 100 of Nitrogen under an atmospheric pressure of fifteen pounds to the square inch and it a gas diffusible through animal tissue. What would be the natural consequence? That the elementary gases are most readily diffusible through animal tissues can be demonstrated by many simple experiments and that the proportion of these gases will largely influence the existence or non-existence of pathogenic bacteria and their toxic products is markedly evident, so that we may soon look to having within our power a truly scientific control over diseases by artificially producing the necessary gaseous environment to bring about the desired change.

William Mazyck Memminger, M. D.

Glasgow, Mont.

RETROSPECTIVE

Depressions of Mind in Neurasthenia.—There are as many neurasthenias as there are neurasthenics. Most of these body-weary people are also mind-weary, and mind-depressed.

Sensations of many sorts may be directly associated with melancholy. Some reminiscent sight, a melody, an odor, a taste, recalls days gone by. With a flood of recollection the eyes are wet.

Neurasthenia is a state of nervous reaction in which the patient does not perceive the onset of fatigue by a normal sense of weariness. And when the waste products of activity have accumulated to a sufficient degree, actual harm to nerve structure is given. Some defect in correlation or co-ordination, as in the fibres in tracts connecting like parts of the cerebrum, may cause the condition. Or some strain otherwheres causing an excessive waste of nerve force to accomplish slight results may be the factor of importance. Again, in some cases, an obscure defect in metabolism, reducing some one or other of the physiologic food-stuffs in the nerve structure.

However this fundamental state may be brought about, we may divide neurasthenic depressions:

1. Feelings due to special sense perceptions. The sound of a particular music, or kind of music may arouse melancholy.

2. Feelings due to the body sense. Euphoria connected with viscera or tissue become interfered with. A chronic pancreatic or liver disease distorts the entire life-feeling of the patient. Changes in this disease are registered in terms of grief or worry upon the mentality of the patient. Sexual internal secretions may react in some disturbing manner.

3. Feelings due to imaginative processes. These approach the realm of paranoia. A too vivid imagination may be responsible for neurasthenic melancholies. The patient imagines his powers are other than what they ought to be. Or, he believes himself a writer, an artist. And he grieves at not being recognized. Or he grieves at the imagined sufferings of the puppets of his imagination, as in his poem, or story, or in the imaginary power he endeavors to exert he finds a source of unhappy suggestion.

4. Feelings due to abulia. When the will-power is much reduced the patient may suffer and become melancholy from the conflict of events and his impairment of power to will a reaction.

5. Feelings due to failures of intellection. The patient may be below par mentally. He suffers a melancholy occasioned by misunderstanding of natural events. He grieves at social evils in a weak way. He is unhappy for matters over which his control is little or nothing, and believes that he ought to neglect affairs to try to remedy others. Misconceptions of this sort are not insane, but due to weakness, and may be cured readily if the body tone of the patient can be elevated.

6. Feelings due to withdrawal of narcotics.

7. Feelings due to change in habits of living, or residence, climate and travel.

8. Feelings due to change of social state. Poverty or wealth, recently exchanged.

9. Feelings due to time of life. Melancholies of neurasthenia due to adolescence or old age.

10. Feelings due to convalescence from severe illness. After infectious disease a patient may recover slowly and be easily moved to tears.

11. Feelings due to false notions of the meaning of life. Novel reading may develop an unhealthy and morbid frame of mind.

12. Nostalgia. This home-sickness, especially in soldiers and sailors, may become truly neurasthenic.

13. Religious overexcitement. A sort of nostalgia may be aroused by singing of hymns. The subject is moved to unexpected tears. This feeling is not necessarily neurasthenical. But in cases in which the subject gives way to a purely weak sorrow, lacking a conviction of sin and evil habits, the tendency to grieve is not worthy, and may mark unhealthy frames of mind.

14. Feelings due to improper methods of life. The prostitute and many ill-placed individuals, regretting a career, may become neurasthenical and melancholy.

15. Underfed students, and overworked persons in general may suffer transitory neurasthenic attacks during which they become melancholy.

16. Hysterical neurasthenia. This condition arising from concealed wrongs or evil doing may give rise to melancholy.

17. Epileptoid neurasthenia. In some patients, instead of an epileptic attack we may observe periodic attacks of neurasthenia, and melancholy may be a feature of the condition of mind at such times.

18. Drug addictions may give rise to neurasthenia. Coffee or tea may cause this state, and some mental depression arise. Under alcoholic intoxication the subject is liable to become melancholy. Abstinence symptoms (see 6) may cause curious nervous prostrations and relaxations and these may be strongly characterized by melancholy.

19. Secondary neurasthenias, as in malarial or cancerous cachexia, may become associated with melancholy.

20. Sexual neurasthenia has strong associations with melancholy. The patient may be unhappy on account of real sexual impotence.

It is half the battle to uncover the cause of a neurasthenic's sorrow.

Melancholia, in the proper sense of the term, is an unreasonable thing. We may argue by the hour with a melancholic patient, and at the end of the time he is just as certain his soul is lost, or his fortune is gone, as when we began to disprove it. He is insane. He does not cede to the principle of sufficient reason one iota of his conviction.

But the neurasthenic who is depressed may be shown. He listens to what we say, at first with a polite regret. For he is tolerably well convinced by his own reasoning that his case is bad. But if the physician is a psychologist, he soon finds the broken thread, the idea about which the neurasthenic has woven his sorrow. This needs to be laid bare, and some good straight talk indulged in.

Any bad habits, or any lack of good ones, must be plainly and kindly exposed.

The face of the neurasthenic shows an intelligent reception of our argument. The difference between the neurasthenic and the insane becomes evident.

But no neurasthenic gives up without a fight. We must remember that absolute candor is to be tempered only with tact—never with deception.

But promise to help. It is a certain thing that any neurasthenic may be happy if he can so order his life as to spend some time earning necessities and some time

in humoring his body. He may not be able to do all he would wish. But if he will try to be satisfied with part of the time in comfort, the rest of the time may be made endurable.

Sexual neurasthenics must be strongly reasoned with. They may be inverts, or perverts. A view of life not incompatible with morals and their physical happiness may be approximated.

Encouragement of some ideals is often very effective. The instinct for self-sacrifice is very frequent among neurasthenics. This instinct affords us the saving grace, ofttimes.

We may give suggestion. The patient is told to oppose no melancholic idea with another idea concerning some pleasure. Instead of grieving for some lost power or some by-gone friend or some imaginative woe, let him turn to some personal power, or some real gift. No neurasthenic lives but has some gift of value. He may be skilful at wood-carving, or in book-binding, or in cookery. There is little harm in playing to his conceit.

Neurasthenics even if conceited are less wearisome than if melancholy, and ready to dissolve into tears.

Besides, some wholesome self-conceit, and confidence may be a starting point to actual superiority gained step by step in endeavoring to get ground for more conceit. In other words, the neurasthenic may perfect his gift. It will be wise, on the part of the physician, to encourage conceit in some faculty in which the patient may safely exercise his skill.

Around this new center the physician builds. He warns the patient to avoid certain foods. As these foods may render his hand unsteady, or may dim his vision, or delay his memory. All is to be done to encourage that gift whatever it is which the patient is to develop, and forget his disabilities. What if he is impotent, or unhappy. Can he not do an expert piece of wood-carving? That is something to leave behind. That is worth even hours of discomfort or sorrow. It is well to leave some completed work in this world when we have to die. And while we are awaiting death it is well to pass the time in doing some good work.

Neurasthenics take to this sort of reasoning. They realize that they have morotic temperaments and that they are defectives, sexually, morally, physically, mentally.

Any possible straw of consolation they snatch. We will always succeed in helping them if we can reason away their melancholy. And this, remember, is quite possible—in contradistinction to subjects of insanity or insane psychosis.

Medicines are very important.

The neurasthenic wants to take his medicine. And there are two manners of prescribing: (1) We may give him a very large bottle. This is best ordered so that he may take a quantity of very good lasting medicine; (2) or we may order the medicine very strong, and regulate it so that he takes a few drops, in pure water. I believe the second method is better.

The neurasthenic is always benefited, at first, and generally for some time, by small powerful doses.

The employment of dilute mineral acids is very successful. Oxaluria may be combatted by dilute chlorhydric acid. This is recommended by many authorities. But I have found dilute nitric acid acts much the best.

This I order:

℞ Acidi Nitrici Diluti .....15 gms.

Sig. gtt. iij. in a half glass cool water, through a glass tube, after each meal.

It is best taken after meals, if we desire a general effect, or indeed, the liver seems to receive its influence then most happily. Before meals it checks a tendency to hyperacidity.

Modern French writers assert that in many cases which we have thought were due to augmentation of acid there is truly a state of hypoacidity.

This may explain why the dilute acid, taken before meals and checking acid secretion, does not act well in neurasthenics, who have a hypoacidity, instead of a supposed hyperacidity.

But I talk with my patient. It happens that the time the acid is taken may be changed, after finding out how it has acted.

The dose may be increased from three drops to six, seven, nine or ten.

Dilute Hydrobromic Acid is an excellent remedy in these cases when some spasmodic condition aggravates the illness.

The melancholy feelings of a neurasthenic often vanish if we can secure a good daily purgation.

Milk, eggs, butter, cheese, meat, olive oil, cereals and fresh green vegetables with an abundance of fruit aid the patient to repair all waste in his nervous system, once the intestine is freed and kept free of partly digested or decomposing matter.

Eating moderately, but frequently, is an excellent rule.

Exercise never too prolonged. The patient ought not to eat when tired from exercise. He should bathe frequently and not overtire with lengthy bathing.

It is astounding how many patients with neurasthenia recover very much, if not completely, when we attend to their flat feet, bad eyes, bent spines and adenoids.

The states of spinal hyperemia which develop from curvature and are aggravated by sexual or intestinal disorders are very many.

These patients entertain the most melancholy views on life.

I do not know which sort of neurasthenia I would rather treat. The neurasthenic in whom I can find little or no organic reason for his nervous condition, other than inner nutritive changes and functional disorders, offers a problem which suggestion often satisfies. The neurasthenic suffering from that as the outcome of spinal hyperemia needs this latter ailment looked to. The bent spine or the hyperemic spine may prove very obstinate. The case of neurasthenia, by the same token, is refractory. And yet we have great powers. Suggestion may not work any greater wonders than orthopedics.

The practitioner feels a sort of neurasthenical melancholy in spending an hour with these patients, who are often, contrary to general belief, not able to pay anywhere near a fair sum for the time and nerve expenditure on the part of the physician.

What is he to do? He may feel certain that a neurasthenic cured, or greatly relieved, is a good advertisement, and quite a possibility. And the gratitude of these patients when they are relieved renders us very much more pleasure than words can tell. Besides it is quite profitable, for a case cured brings others.

The search for a cause for the neurasthenia, and the feelings of depression may take us far afield.

The patient is often a victim of most singular ideas. Some are based on utter misconceptions of sexual hygiene, of moral duty, of social obligation. His relief in finding himself understood, and set right, is tremendous.

But the treatment is not finished when the cause is found out.

There are many weeks of struggle. We have one relapse after another. The patient must be held fast to, and cheered, and guided. Medicines will fail, and must be changed. We need a large set of similarly acting remedies to employ in succession. Placebos are not good, and ought to be reserved for truly insane patients.

Very slight alterations in treatment give the necessary stimulus, and the patient has the sensation of being surrounded by helpful influences. For he reads our determination in our character of resourcefulness. This is not a modified faith cure. We may be sure that just as one article of diet may weary our stomachs if eaten interminably, so one remedy or one form of remedy may weary the neurasthenic, and quite to his unconscious forces. For he may willingly co-operate with us.

Resourceful is the word. We have to be able to adopt any treatment to the peculiarities of the patient, so that he accepts eagerly as a new process what we endeavor to maintain of the old.

Greet him pleasantly, and never seem surprised at what he tells, unless you see that he tries to surprise you, then fall in with his humor if the surprise is not exhibited over matters which you would be supposed to be informed upon.

In closing, let me tabulate several sorts of melancholy sensations told me.

1. The sound of a train, passing distantly, while the night is still and warm, as in June.
2. The sound of oars splashing the water, by moonlight.
3. The sound of popular songs, sung by night, and unaccompanied, rather distant.
4. The sight of a valley.
5. The sight of two very deep shades of two primary colors.
6. Tuberoses.
7. Jade ornaments.
8. Large type in solid reading matter.
9. A broad shouldered man.
10. A short blond woman.
11. A boy with bare feet.
12. Stone covered arches.
13. A tower against the sky.
14. Sunset, with chill of evening.
15. A flight of birds.
16. Parting from acquaintances made in traveling.
17. Any brief parting and good-bye.
18. A pipe.
19. A field of daisies.
20. A road deep between grassy mounds, on an August day, with the sun high.
21. A bay at sunset.
22. The thought of life's separateness.
23. A squad of soldiers.
24. A smell of cedar.
25. Two horns in harmony.
26. A purplish pink.

One writer says: Quelle blague que la vie!

But I say: Life, always a fascination if a sorrow, and tiresome only if too happy and selfish.

Poor Strindberg!

But then he wrote otherwise in days when his history of a neurasthenic was conceived. The "Inferno" of August Strindberg is intensely a book for us to know. And in the characters of the northern teuton races, especially of the Scandinavian divisions of it, there are innumerable instances of neurasthenic melancholies. Even in the fairy tales of Hans Christian Andersen the note is struck repeatedly.

I remember a curious little tale of a lazy child turned into a spider and compelled to spin a web long enough to reach across water which surrounded the island of her imprisonment. The onset of winter, so potent to the northern mind, brought fear and suffering. Then came release and the magical return of flowers, sunshine and the life of a child in all its enjoyment of warmth and pleasure.

Poor neurasthenics (back to them and their melancholies!) you would be so happy if a fairy force could disenchant your bodies.

No. I believe every neurasthenic has some high quality which is paid for and won only in suffering.

In this conviction I have saved many a sick and melancholy patient from an untimely end. We need no fairy magic. All that is wanted is a fixed intention to produce and suffer, to live and suffer, to make sacrifices and suffer.

The physician cannot relieve all suffering. The philosopher renders suffering endurable. Upon philosophy in its pure sense we may call. The patient can have physical ailments relieved. It remains, after this, to do something with the life we have to live.

Finger Enucleation of the Tonsil. — Mathews (Ann. Surg., Dec., 1908) prefers ether to the stage of primary anesthesia and not that of obliteration of pharyngeal or corneal reflexes. The patient is placed horizontally on a low table, the head at the end but not hanging over. The gag is inserted and held by the anesthetist, who controls the head and presses (if necessary) upon the tonsil from without. The jaws are gagged just widely enough to admit one or two fingers. The operation is done by the sense of touch. The right tonsil is thus removed: The gag on the left side of the mouth; the index or index and middle finger of the right hand are inserted and their palmar surface applied to the right anterior tonsillar pillar. By several strokes downward a plane of cleavage is found and the tips of the fingers felt to enter between the outer fibrous tissue-covered surface of the tonsil and the inner surface of the pharyngeal wall. If (as less frequently occurs) the tonsil adheres to the posterior pillar the palmar digital surfaces are then brought in contact with the exposed surface of the tonsil and the tonsil forcibly pulled forward, or rotated on its vertical axis, toward the mouth. The adhesions to the posterior pillar separate easily. Next the finger is inserted into the space made by separating the anterior pillar from the tonsil, the palmar surface is inserted toward the tonsil and brought in contact with the upper pole. With the finger above the tonsil and the pillars

thoroughly separated from it, the tonsil is pushed inward toward the pharynx and downward toward the epiglottis, thus stripping it totally from the pharyngeal wall. The tonsil, now out of its natural bed between the pillars, remains attached only by a band of mucosa at its lower pole. One can now tear away this remaining attachment with the fingers; but this being more difficult and time-consuming than the preceding steps, we complete the removal by using a Mackenzie tonsillatome of small size and aperture. The instrument is inserted with the finger over the aperture and the blade pushed home only when the finger feels that the tonsil has engaged. The gag is then (as a rule) shifted to the right side of the mouth; and the left tonsil enucleated with the fingers of the left hand. One finds after removal a whole tonsil in a connective tissue capsule. Rarely are any muscle fibres of the pharyngeal wall found attached to it. After the tonsils are removed the finger explores the pharyngeal vault, and if adenoids are found they are removed with the curette. Mathews has done this enucleation many hundreds of times; and (though he has had two fairly severe cases of bleeding after tonsillotomy) he has had no such case after finger enucleation. Convalescence is no longer or more painful than after tonsillotomy; and the operation is so simple that family practitioners learn to do it perfectly well after a few trials.

Human Vivisection.—A remarkable experiment has just been successfully ended after having extended over five years; the object was to determine the functions of certain important nerves. It was Dr. Henry Head, physician to the London Hospital, who was the subject; as accidental injuries involving the problems studied are very rare and as previous experimentalists had been compelled to attack the problem by indirect and less satisfactory methods, Dr. Head offered his hand for the tests, when he was forty-two and in perfect health. Since boyhood, he had suffered from no illnesses except from postmortem wounds, none of which had, however, attacked his left hand and arm, which were entirely free of scars or deformities. For two years before the beginning of the experiment he had abjured smoking entirely; no alcohol was ever taken on the days when he was under examination; and for some years (except on rare occasions) he had abstained from alcohol. On April 25, 1903, an important nerve (the report does not designate), was divided, a small part of which was excised and the two ends remaining were united with fine silk sutures. Then followed a series of experiments which are reported to have been completely successful; and after five uncertain years of deep study and scientific perplexity, Dr. Head is as well as ever. Much has been solved of the intricate problem of the means by which the one telegraphic nerve fibres report to the brain. Loss of sensation in various areas at once followed the operation; but as the nerve tissue gradually became renewed sensation as gradually returned. The back of the experimented hand still presents two parts in different states of sensibility.

Cancer of the Mouth and Tongue.—J. C. Warren (Am. Surg., Oct., 1908), finds that the relation of the lymphatic system to the primary growth is the most important anatomical consideration. Chronic inflammatory processes of the mucous membrane which do not yield promptly to local treatment predispose to cancer and should be treated surgically. Cancer of the mouth and tongue is a local disease limited to the tissues immediately surrounding its point of origin, and to the adjacent lymphatic system; internal metatases are rare. Microscopic examination of the primary growth is the test of diagnosis. Antisyphilitic treatment should not delay surgical interference. Operative treatment involves (a) preliminary treatment of the oral cavity, (b) protection of the respiratory tract by drugs, intubation, pharyngotomy or by position, (c) removal of diseased tissue and an additional inch of healthy tissue, (d) blunt dissection of the lymphatic tissues of the anterior cervical triangle on one or both sides, (e) as an alternative the block dissection may be made two weeks after the primary operation, (f) the intrabuccal operation should be supplemented by dissection of one or both anterior cervical triangles, (g) the submaxillary route is inadequate for free access to the diseased tissues, (h) the route through the jaw exposes the entire field, but adds to the surgical risk. The ideal operation should contemplate free exposure of the mouth and anterior cervical triangles as a continuous area, with a block dissection of the diseased contents. The mortality varies with the extent of the operation (between five and thirty-five per cent.). Death usually results from shock, sepsis or bronchopneumonia. In 112 operations at the Massachusetts General Hospital sixteen patients were free from recurrence more than three years after operation. Of 57 cases of lingual cancer, ten were cured by operation. Local recurrence of the disease was more frequent than recurrence in the lymphatic glands alone. In only one case was recurrence observed more than three years after the operation.

Undescended or Maldescended Testicle, Associated with Inguinal Hernia.—W. B. Coley has operated upon 126 cases (Am. Surg., Sept., 1908). In seventeen years at the Hospital for Ruptured and Crippled in New York City, in nearly 60,000 cases of hernia, there were 737 undescended testicles (1 in 80). Varieties are due to interruption of normal descent (abdominal, inguinal and pubic ectopia) and maldescension, which is rarer, the testicle lying in some abnormal position, in the perineum, Scarpa's triangle or upon the aponeurosis of the external oblique). Coley particularly discusses the rarer cases. Etiologically, all his 126 cases were associated with a hernial sac; and this he considers due to a congenital defect. He finds that the undescended testicle is not predisposed to sarcomatous change, as is ordinarily taught. Indications demanding operation are pain and tenderness, predisposition to inflammatory diseases, and the effect upon the patient's development and virility. In children the eighth to the twelfth years are the best for operation; earlier the testicle might descend naturally; on the other hand operation should not be postponed until after puberty, because of the bad effect upon development. No case of double ectopia should reach puberty unoperated. Coley opens the sac freely by Bassini's incision; separates and ties off the hernial sac from the cord; after

carefully freeing the cord above, he brings down the testicle into the scrotum, then closes the canal by the modified Bassini method, being sure the external ring is made as small as is safe for the cord. Coley never sutures the testicle in the scrotum, but relies upon carefully freeing the cord above; he thinks this can be done satisfactorily without cutting away all the structures of the cord, except the vas and its vessels. He never sacrifices the testicle, for the hernia can be cured as well without this; in children he seeks to preserve it for its effect upon development; in men for virility and for the effect upon the psychism. These testicles are, however, functionally inactive, so far as spermatozoa formation is concerned. In only one of his cases has there been recurrence of hernia. Of 19 cases examined one to ten years after operation, 8 had remained in scrotum; of 30 children examined one to fifteen years later, 11 were in scrotum, 15 were outside the external ring and 4 were in the canal or not felt.

Practical Applications of Laboratory Findings.—There is a somewhat unfortunate tendency to form two camps: the clinicians on the one hand would taboo the laboratory; on the other hand, the man of the microscope and the blood test eschews the "guess-work" of the bedside diagnostician. The Therapeutic Gazette of March, 1909, presents a wise and reconciling editorial on "Practical Applications of Laboratory Findings." There are cited the authoritative results of Cannon and Murphy's admirable research upon the movements of the stomach and intestines in the course of physiologic digestion and the modifications of these movements consequent on anesthesia, manipulation and various forms of surgical intervention; these results have had a distinct influence on surgical technique. In Bulletin V., The Report of Research Work, Division of Surgery of the Medical School of Harvard University, there appears an admirable summary of this study of the gastric movements immediately after intestinal operation, the effects of end-to-end and lateral intestinal junction, of intestinal thrombosis and embolism, of etherization, and exposure to air, cooling and handling. The experimental method of Cannon and Murphy consisted in watching the changes in the shadows of a bismuth food diet cast upon a fluorescent screen by the X-rays. For twenty-four hours previous to operation or observation the patient fasted. To test the immediate effect of intestinal operation on a definite activity of the alimentary canal, the rate of discharge of food from the stomach was chosen. When cats are given by the stomach 25 c. c. of mashed potato mixed with 5 gm. bismuth subnitrate, gastric peristalsis begins soon after the food is introduced. Usually within ten minutes the pylorus has relaxed and permitted some of the gastric contents to enter the stomach. The question to be settled was the effect of intestinal operations on this rate of discharge from the stomach. The results obtained are thus summarized: After high intestinal section and suture gastric peristalsis is not interfered with. But for almost six hours after recovery from the ether the pylorus remains tightly closed against the peristaltic pressure and does not permit the food to pass into the injured gut. There is a striking coincidence between the duration of the delay of the discharge from the stomach and the period of primary cementing of intestinal wounds. After end-to-end suture of the severed intestine no inefficiency of the gut in the region of the suture was observed; but after lateral anastomosis there was always an accumulation of food in the chamber formed by the apposed loops. The cutting of the circular fibres in this operation destroys efficient peristalsis at the junction unless the circular muscles of both loops work in co-ordination. As they do not so act, at least for days and probably for weeks following operation, lateral anastomosis is not so ideal an operation as the end-to-end union. In case of intestinal obstruction food leaves the stomach without delay; as it accumulates above the obstruction violent peristalsis repeatedly occurs, tending to force the food past the obstacle. The peristalsis alternates with vigorous segmenting movements. After such turbulent treatment the food has been observed moving swiftly backward to the stomach along the course traversed in its passage from the stomach to the region of obstruction. After thrombosis and embolism there is usually no movement of the stomach or intestine; the food lies quiet in the stomach until discharged by emesis. In one case gastric peristalsis was observed for some hours, and a slight amount of food was discharged into the intestine, but it gathered above the infarcted region and was not advanced further. In studying the conditions attending operation as possible causes of postoperative paralysis of the alimentary canal etherization, one-half to one and a half hours, was found not to delay to any marked degree the discharge of food from the stomach; exposure to the air and unusual cooling of the gut likewise caused no noteworthy delay; but by far the most striking effects were seen after handling the digestive organs. Even with most gentle handling within the peritoneal cavity or under warm salt solution, no gastric peristalsis was seen and no food left the stomach for three hours. Fingering gently in the air caused still greater retardation of the movement of the food. With rough handling in air no food passed from the stomach for four hours; and then it emerged very slowly and was moved onward with every evidence of extreme sluggishness of the intestine. These researches have made end-to-end anastomosis preferable to displaced lateral juncture. The experience of most surgeons corroborates the findings of Cannon and Murphy regarding intestinal paresis resulting from handling, since cases of tympany are far more likely to develop when, because of difficulty in finding a lesion, manual examination of the entire gastrointestinal canal has been needful than when resection or other severe operations have been performed on a section of gut quickly reached and readily isolated. As to reversed peristalsis and vomiting of large quantities of intestinal contents consequent upon the usual form of post-operative intestinal obstruction (inflammatory paresis) this seems mechanically impossible. The vomitus represents rather a transudate into the paralyzed stomach.

The Puerperium.—Gellhorn (Interstate Med. Jour., January, 1909) finds that out of 291 mothers with gynecologic ailments, 156 were sick ever since they had given birth to a child. In most of these cases the origin of these illnesses could be traced back to a faulty management of the purperium. Prophylaxis is the first essential to a well-directed puerperium. The object of obstetrics is not merely to deliver a living child, but also to restore the mother to perfect health. A puerpura should stay in bed not less than eighteen days; every

puerpura should wear an appropriate bandage; the model described by Semmelink appears to be most advisable. Mild, methodical exercises started in the second week after confinement, and continued for several weeks after leaving the bed are indispensable to a complete restoration. Every puerpura should be examined carefully six weeks postpartum before she is discharged from medical observation.

Renal Calculi.—Zuckerkandl can distinguish in a radiograph between encapsulated and free calculi, the latter being found in the ureter. Free calculi in the kidney develop in the same manner as in the bladder. If the stones are in a cavity, this points to the presence of abscess and hydronephrosis. All calculi should give shadows in the radiograph; and no good explanation has been given why they are occasionally absent. In the removal of calculi Zuckerkandl now prefers pyelotomy to nephrotomy as being much less dangerous. This procedure, however, is not suitable for the removal of renal gravel; he splits open the renal pelvis at the ureteral point or origin; and through this opening palpates the renal obstructures. A drain is inserted, which is removed after a fortnight. In one of seventeen cases operated on in this way there was but one fistula formation.

A Ship's Deadly Cargo.—A steamer from Antwerp recently anchored off Grimsby, in England, and signalled for a medical officer to come aboard. Of the six steerage passengers, five (two men, two women and a boy) had died within an hour of a mysterious malady. The vessel was at once quarantined by reason of the recent cholera epidemic in Russia. Ptomaine poisoning was found upon autopsy; but the deaths were found to be really due to fumes from the ship's cargo, in which there were nine tons of ferrosilicon in barrels. This substance is used in the manufacture of steel; the captain testified that he had been told only of its liability to explode if confined, and to catch fire if wet, nor was he aware of any existing notice of the Board of Trade relating to this chemical's dangerous properties. Ferro-silicon is made up of iron, silicon, carbon, jhosphorus and arsenic; fine gases emanated from the mixture—arseniuretted hydrogen, phosphoretted hydrogen, acetylene, pure hydrogen and sulphuretted hydrogen. The first of these substances is said to be so dangerous that Gahlen, its discoverer, died after inhaling one bubble of it. Within twenty-four hours the ferrosilicon would generate 110 feet of very deadly gas, if it be dry; but if this substance be moist there would be three times that volume of gas, sufficient to kill a hundred people. In such case the symptoms might be mistaken for cholera or ptomaine poisoning. These, it would seem, are the first recorded cases of death by inhalation of gases generated by ferrosilicon which the Coroner justly enough declared should not be carried in ships used for passengers.

One Thousand Tuberculous Tests in Young Children.—These tests were made upon ward patients, very few of whom were over three years of age, the majority being under two. L. E. Holt (Arch. Pediat., Jan., 1909). The tests made were the ophthalmic, the von Pirquet and the subcutaneous. No one of them is absolutely conclusive as is the demonstration of the tubercle bacillus in the sputum, cerebro-spinal fluid or elsewhere, and it is erroneous to depend upon the local tests to the neglect of other means of diagnosis. In general, whilst these tests furnish strong probability of the existence of a tuberculous lesion, they do not enable us to distinguish between a latent and an active condition. This may be confusing. A child may give a positive skin or eye reaction when suffering from an acute pulmonary disease which by its course is shown to be non-tuberculous, although grave suspicion of acute pulmonary tuberculosis may have existed and apparently been confirmed by the tuberculin tests. Much needless alarm may therefore be produced by a positive reaction, which really indicates only that somewhere the child has a tuberculous focus but does not prove that this presence is of a tuberculous nature. Whilst of the greatest assistance in diagnosis, the various tests are always to be taken in connection with the general symptoms and the physical signs taken apart from them, however, they may be misleading.

Asepsis in Obstetrics.—Krönig (Münch und Woch., Nov. 24, 1908) rightly objects to complicated aseptic technique and to the present "era of rubber," the introduction of rubber gloves has not led to any diminution in mortality or morbidity in normal labors. [In point of fact, the vaginal mucous membrane and secretions have quite unusual bactericidal properties.] Much disinfection of the hands and of the woman is lengthy and unnecessarily annoying to the patient. There should if possible be no disinfection whatever of the external or internal genitals; the labor should be so conducted that the doctor need likewise disinfect his hands but little, all stress should be laid upon the local and general predispositions to infection, and to obviate these as far as possible. Krönig believes the principle of freedom from germs to be an impossible and an incorrect one. The effective disinfection of the vulva is impossible unless all the pubic hair be shaved; this should, however, be done in case of any operative procedures, when effective disinfection can be attained during anesthesia. To escape the dangers of internal examination Krönig would palpate per rectum; he finds the results here to compare favorably with any other method. Only among primiparae does he protect the perineum by the use of rubber gloves. He does not disinfect after labor. The puerpura is allowed to leave the bed after the first day (!) if possible, this procedure diminishing the local predisposition to uterine infection.

Rheumatoid Infections in Children.—F. P. Anziger (Ohio State Med. Jour., March, 1909) finds children susceptible to the infections which most adults resist by acquired immunity. Acute pyogenic and septicemic infections are common and, often starting from a trivial lesion, permit widespread metastases and may even prove fatal. In children the soft tissues, especially near the epiphyses and joints, are vulnerable points for microorganisms and their products; the symptoms of such lesions often simulate acute articular rheumatism. Acute rheumatism is regarded as a specific disease due to an organism not yet fully established; until the germ is isolated we must depend on clinical characteristics, which are untrustworthy; the disease is comparatively uncommon in children, whereas pyogenic infection frequently finds them among its victims. For prophylaxis we safeguard the child's general resistance; by proper hygiene; by keeping careful watch of the infection atria of the child; by treating every trivial infection. When one or more joints be-

come acutely inflamed, tentative measures for a short period are justified, to allow for resolution or abatement. But if the symptoms continue and the diagnosis is obscure, exploratory incision will then be indicated.

Lung Surgery Under Positive and Negative Pressure.—S. Robinson and G. A. Leland (Surg. Gynec. and Obst., March, 1909) reviews the different methods of applying the four elements necessary to positive pressure apparatus—air compression, an anesthetizing segment arc, a device for introducing these into the respiratory tract and a means of varying the resistance to expiration. They find that the positive-pressure method has been proved to have no more pathologic effect on the circulatory and respiratory functions than negative pressure; the clinical operative results under positive pressure have justified its employment; it possesses many advantages over the negative-pressure method. Air compression should be excessive rather than insufficient; it is most conveniently supplied directly from a small rotary air-pump. The anesthetizing segment should consist of an ether bottle with sidetracking connections and permanent joints arranged as simply as possible; rectal anesthesia dispenses with this portion of the apparatus. A positive-pressure apparatus should be supplied with a face mask which, in accidental plural punctures with subsequent dyspnoea will amply suffice for emergency use; in most thoracic operations it could without danger be removed in the event of vomiting. For animal experimentation masking and intubation are unquestionably the methods of choice. The water bottle is the preferred device for resistance, being always available and regulated with ease. All forms of rhythmical artificial respiratory devices are too elaborate for universal surgical application. Afferent air of sufficient volume and pressure, with low resistance to support the normal respiratory movements, by providing air exchange and preventing collapse is the fundamental principle of positive pressure.

Hysteria.—E. Meyer (Deut. Medic. Woch., Sept., 1908) details an instructive history. The patient complained of paralysis of the left hand; examination revealed hemihyperthesia, diminished mucous surface reflexes and a marked mental peculiarity. The purely psychogenic nature of hysteria and the morbid irritability and instability of character, which depended on an abnormal accentuation of sensations and conceptions, were well exemplified. She suffered from hysterical fits. The treatment had therefore to be directed partly to the local and partly to the general symptoms. But on examining the local symptoms closely it became obvious that that depended on psychic changes; Meyer therefore concluded that the treatment of hysteria must in the first place be psychic; since the mental condition in hysteria is simply that of childhood, the general trend of treatment must be educative. The physician must gain the patient's full confidence; he must hear in detail all her symptoms; to shorten her account or to appear to pay little heed to it will lead the patient to think he has little interest or is influenced by relatives. The diagnosis having been made, the explanation should be made the patient that her nerves are ill, but that this illness is perfectly curable, though this must take a certain time. This explanation should be adapted to the patient's social position, intelligence and peculiarities. Next the relatives must be told that the disease is neither imagined nor exaggerated. The word "hysteria" should never be used, unless it is certain everyone concerned understands the word properly. (Many medical men do not understand that hysteria is a real disease.) Then Meyer determines what sort of treatment should be carried out, after having first learned what has already been done so as not to repeat methods which have failed. Hydro- and electric therapy and carefully carried out exercises are valuable. If possible the patient should be removed from her home and her relatives. Good can be done by hypnosis; but here care is essential, since harm may result; it is easier to render a healthy person hysterical by hypnotism than to cure a healthy person by its means. Until the value and dangers of Freud's method are fully known it is better to reserve a final judgment and at all events to warn the general practitioner against employing it. Dietetic measures for the improvement of the general condition are required; and not only overfeeding courses, but also the use of nutrient preparations do good service. Drugs are of little use; but as the ordinary patient regards medicine as treatment something should generally be given. Bromides (but not morphine) are used as a sedative; we may use also valerian and its substitutes. Unnecessary examinations should be avoided, as also the treatment of small local disturbances in connection with the genital organs.

The Treatment of Snake Bite.—Doubt has recently been thrown upon the theory (it was originally Sir Lander Brunton's) that permanganate of potash is a certain remedy if promptly and properly applied; the method, now well known, is to tie a bandage tightly over the limb above the bite, convert the punctured wound into a clean cut with the lancet, and rub in the permanganate moistened with water. In India where snake bites are universally deadly a case containing lancet and permanganate is sold very cheaply. Surgeon-General Benson and others who took part in the recent medical congress in Bombay, have found, however, that though cases of cure are reported, but little reliance can be placed on the remedy; it is claimed that the experiments which appear to support Sir Lauder Brunton are inconclusive, and that there is difficulty (assuming the value of the permanganate) in bringing the poison and antidote into intimate contact in the tissues. When a snake bites, the poison is deposited not in the skin itself, but in the aveolar tissue beneath, and as the skin is freely movable the fangs may drag it away from its proper position before the poison is injected; it thus happens that the poison is not deposited immediately beneath the punctures. Major Wall suggested that there would be no difficulty of this sort if the permanganate were injected into the blood stream instead of into the tissues.

Microbes in Polaric Regions.—Severe and continuous cold is presumed to be an enemy of life in every form; but data furnished to the Pasteur Institute by Dr. Charcot, the Antarctic explorer, proves conclusively that various forms of microscopic life flourish despite the intense cold of the south polar regions. On examining the intestines of animals twenty-four different kinds of germs were found, of which fifteen were already known in Europe. Even the germs found in Antarctic soil presumably untrod by human foot were found to be identical with those of the inhabited world.

MISCELLANY

A Scientific Don't.—An exchange observes: "Don't make a nuisance of yourself by making commonplace remarks about the advance of modern science; everybody knows it is advancing."

A Clergyman's Tribute.—The Rev. Dr. Leighton Parks observes: "You will find to-day the largest body of disinterested, laborious, self-sacrificing men, looking for no reward and getting no reward except that which comes from faithful service to mankind in the profession of medicine."

A congress of dentists in London has declared that the condition of the teeth of civilized races is very serious, "imperiling the future of those races." The trouble is, comments an exchange, that the civilized races have fallen into the habit of arming to the teeth instead of using a brush.

A Smokers' Heart in a Child of 3 Years 9 Months.—Such a case was recently discovered during a medical school examination in England. The father had trained the child to smoke; and was now giving him ten cigarettes a day and was making money by exhibiting the child's accomplishment.

A National Leprosarium.—At a recent conference in Washington of State and provisional boards of health of North America, one of the chief matters taken up was the plan to have congress appropriate one million dollars for a national leprosarium, where the government can take care of all the known lepers in the country.

An Unfortunate Experience.—A surgeon of our Navy was recently charged with "burning a midshipman's eyes" with silver nitrate. The application was made for glanular lids. Only the ophthalmologist should use this caustic in strength greater than one or two per cent.; nor should nitrate of silver be used at all where there are corneal abrasions.

Is it Yoghurt or Innate Vitality.—The Bulgarians and Rumanians are among the longest lived people in Europe. There recently died, for example, a gentleman aged 125. Though very weak physically, he preserved his mental activity to the end. Metchnikoff's book, the "Prolongation of Life," would indicate that such cases are not rare. It is claimed that this longevity is in large part due to the consumption of yoghurt, a kind of sour milk.

Lucky Blacks.—A tribe has been found in Mornington Island, in the Gulf of Carpentaria, which it is believed has never before come in contact with white men. These blacks were in their primitive state; they did not know of the use of tobacco and would not eat bread, meat or even sugar, although they readily tasted everything given to them. There was no sign whatever of any disease, and, although emaciated in appearance, they were strong and agile.

Ambulance Bill a Law.—The bill establishing in New York City a Board of Ambulance Service to be composed of the Commissioners of Police and of Public Charities, and the President of the Board of Trustees of Bellevue and Allied Hospitals has by the signature of Governor Hughes become a law. The board is to have control over all ambulance service in New York except that maintained by the Health Department, with power to establish rules and regulations.

Insanity Increased in Japan.—Fifty years ago, states Dr. K. Saito, director of the Aojama Hospital for the Insane in Tokio, insanity in Japan was very rare. Thirty years ago it began to increase, and after the Chino-Japan war there was further increase. The increase was more marked after the war with Russia. "I believe that as civilization advances in Japan, insanity becomes more general, due to the struggle for existence." Dr. Saito is making a tour of the world inspecting hospitals for the insane.

An Attic Menagerie.—The architect R. F. Almirall has filed plans for a $40,000 pathological laboratory to be erected as an annex to the Metropolitan Hospital on Blackwell's Island. The main floor will contain the offices, a museum and specimen room and a room for autopsies; the second story will be fitted with a library and laboratories for microscopical, chemical and bacteriological research, and also a special private laboratory for the surgeons. The attic will be fitted as a menagerie for the animals who are to undergo experimentation.

Beer Blamed for Mosquitoes.—The prohibitionists in an Arizona town are reinforcing their propaganda upon a rather unusual basis; the mosquitoes therein are fiercer than ever, and for this the beer drinkers are blamed. This town gets its supply from points sometimes as far away as Houston, Texas. When the cold storage cars stand open for any length of time near the Texan marshes swarms of mosquitoes are tempted to hide in their dark corners. When the car is filled and sealed these insects are prisoners and transferred to the desert mining camps where the heat livens them up prodigiously. The mosquito is said to have been unknown in Arizona a few years ago; and beer importations are in some measure at least held responsible for their present-day appearance.

A cure tax on every visitor to French health resorts is to be imposed, by the terms of a bill recently passed through the French senate. It may be levied at any time during the year, but never more than for a consecutive period of four weeks in respect to any one visitor. Permanent residents or people owning property in the resorts are exempt; hotel keepers and proprietors of boarding houses are made responsible for the collection of the tax, which must be added to the bill. Every town or commune containing mineral springs or having mineral waters brought to its territory, every mountain resort or climatic station and every seaside as well as inland watering place is termed a public health resort and is empowered to mulct all visitors. The proceeds of the tax are to be devoted exclusively to local improvements.

Anti-typhoid vaccination, states Lieut.-Col. W. B. Leishman (Jour. Royal Army Med. Corps) has been tried extensively in British regiments serving on stations where it is difficult or impossible to avoid infection. Of 5,473 soldiers inoculated only 21 were subsequently infected, with two deaths; while of the 6,610 non-inoculated in the same regiment 187 had typhoid and 26 died. Moreover, of the 21 inoculated cases 13, with two deaths, had received the old vaccine, which has since been greatly improved. Four cases had received only one inoculation, and were mild. Only four contracted typhoid after two inoculations, and all were very mild; the diagnosis, indeed, was doubtful in one. "Such results should be heeded by nurses and others who come in close contact with typhoids, for the dreadfully large percentage who become infected shows that prophylaxis is faulty or impossible."

A NEW ERA IN MEDICINE.

BY J. MADISON TAYLOR, A.B., M.D., PHILADELPHIA.

WHAT is most needed to place the subject of scientific medicine on a more efficient basis? The advances made in throwing light upon obscure problems of life are so vast, minute and thorough that it is impossible for the busy practitioner to comprehend all the essential points, short of neglecting his daily work. Specialization has become necessarily so narrow that the specialist is unable to pay adequate attention to departments of progress other than his own.

None are more keenly aware that a fundamental revision and simplification is needed in medical principles than physicians themselves. We know well that, to render our art and science practically available, we require greater exactitude and precision in the underlying laws of growth, change, derangement and of the possibilities for repair. Yet, so conservative are we, so disinclined to accept radical changes, that we often welcome ultra or pseudo-scientific propositions and remain hypercritical of evidences which make for that breadth of view which is essential to uniformity in progress. We continue to think and act along old familiar lines, hoping devoutly for discoveries which shall fortify us in our well-worn, customary paths.

The history of medicine is little read, nor has there been presented a philosophy of history for us. Yet, if we would read this history as it stands, with a philosophic spirit, it would furnish us much illumination. It is the purpose of this article to offer a brief summary of the comprehensive researches of an American physician which supply precisely what is so much desired.

We in America look habitually to Europe, especially to Germany, as a fountain of wisdom. This physician, Charles E. de M. Sajous, M.D., LL.D., of Philadelphia, whose researches I am about to discuss, is of Continental race, long training in the best schools of France, whence the most original and valuable thoughts are known to arise, and is the recipient of notable European distinctions in science.

These researches embody the results of a lifetime of devotion, of personal sacrifice, to the solution of the more puzzling and complex problems which condition clinical efficiency.[1]

The one object which Dr. Sajous has kept unwaveringly before his mind is to furnish an exact system of the principles of medicine which his colleagues may employ in daily bedside problems. The whole is a philosophic study of human economics, through all those factors which constitute the avenues of scientific medicine, utilizing at all times our priceless heritage of experience, the age-long accumulations of recorded findings. The prevailing custom, even among experimenters, is to poise a conclusion on a few facts. Dr. Sajous regards this as pseudo-science, and holds that it is only by intelligently utilizing the multitude of experiments and clinical facts at our disposal that we can reach any sound conclusions. To him, an experiment is but a single brick in the construction of the scientific edifice.

If much or little honest doubt prevails as to the practical efficiency of the art of medicine the vital defect is not in the direction of reliable evidence, nor in omissions in exact science, but rather in the formulations of fundamental principles.

It will be admitted that if the art of medicine can be provided with a complete system of fundamental principles underlying and conditioning all the various scientific departments (dealing with growth, variation, vital action normal and morbid up to precise, simplified laws of regulation, control and repair), it would at once achieve that confidence in the community which its economic importance deserves.

It is the purpose of this article to show that this has already been accomplished by inviting attention to one notable contribution to the advances in health conservation and destined to prove of lasting value. This is the masterly work of an American physician, Dr. Sajous, of Philadelphia, through his researches on the "Internal Secretions." It consists, in brief, of so thorough a study of the inherent potentialities of the body that they can now be fully comprehended and conserved through rational agencies in common use, and to a degree which has hitherto been impossible.

Had this conception enamated from the centers of European learning it would hape made a more prompt and extensive impression than it has yet done. We in America are still over-largely influenced by "foreign authorities."

Only one phase of Sajous' work can be presented here, viz.: the precise explanation which his researches afford to the action of remedies in disease.

After all, the most important, at least the most comprehensible department of medical art is the *treatment of disease*. We will endeavor to show how plain and clear the subject becomes when once there is supplied the essential principles of growth, life action and change. This Sajous does, and it has not before been done.

These researches contribute equally to the illumination of many other departments of medical science, to biology, to physiology (the science of growth, action of cells and organs, etc.), to pathology (morbid changes, derangements of action, etc), to diagnosis (the differentiation and significance of altered function, symptomatology, etc.). Original conclusions and truths are evolved which, when comprehended in their full relationship and proportions, are calculated to revolutionize many points of view long accepted. Abundant new, fundamental truths are also furnished; many isolated and fragmentary truths and discoveries are made clear and available. He shows that, whereas we may have not, until recently, comprehended the practical bearing of much that is known and established, now, we can link together and more fully appreciate a multitude of established facts which can only be utilized in our practice by the light so shed.

Sajous has, in numberless instances, elucidated problems hitherto obscure; he has reconciled apparently conflicting statements by supplying omissions necessary to logical and scientific consistency. He has codified old laws and new, but above all he has made many discoveries calculated not only to simplify our conception of the complex phenomena of life and disease, but he indicates numberless well defined lines of research for others to follow.

This last should be especially noted. No one man can in one lifetime of unremitting effort do more than is consonant with his opportunities, which are necessarily limited. Some can and do hew into the masses

[1] Prof. George Dock, formerly of Michigan University (Ann Arbor) and now of Tulane University, New Orleans, refers, in Osler's "Modern Medicine" to Dr. Sajous' work on the Internal Secretions as "monumental."

of confusion and ignorance more conspicuously than others. The best which any single genius can accomplish is little, but that man is the largest contributor to the fund of universal knowledge who most clearly and definitely points out for others the paths to the mines of truth.

The most obvious result of Sajous' work is the evolution of a series of working principles so symmetrical and comprehensive that we may confidently regard them as contributing a new era in medicine.

Whether we are yet provided in the science of medicine with enough facts, materials for building, to form incontrovertible laws is an open question. That we do lack many fundamental facts Sajous has plainly stated in his paper on "The Shortcomings of Physiology," and he specifies what and where we do need. He has done more. By searching seduously among many careful but often scattered records he has discovered countless wholly or partly forgotten, yet definite, observations, important contributions and incidental conclusions, and many more partial or undeveloped ones, all which are per se valuable and significant. He then arranged these in their just relationship and supplied collateral facts, conclusions or logical inferences, whereby the partial ones became definite, concrete conclusions. Combining these isolated or half developed truths by logical synthesis, the results form in many instances genuine discoveries. Not only so, but Sajous' interpretations include a long array of first-hand discoveries. At my suggestion he enumerated and outlined these, as far as memory could serve, in the preface. There are thus formulated at least ninety-six original contributions to science.

His most important contribution to humanity is, however, such an orderly arrangement of disconnected factors, evolving into essential principles, that the product constitutes an entirely new point of departure whereby the data of medical science (amassed throughout the ages and forming safeguards to millions of imperilled human lives) are now made vastly more available. With this wholly novel equipment it is well within the powers of any intelligent practitioners to so apply the principles outlined, along with their own accumulations of experience, that they shall themselves become better agents for the conservation of human energies and for the saving of health or life.

He shows that till recently we have not known the fountain sources of vital regulation, nor how the cellular elements (out of which all tissues are built) utilize oxygen; we can now do so and can confidently hope to gain an efficient control over morbid tissue changes. Nor could this have been done until a clear conception of normal tissue changes was supplied. The crux of the matter is *how precisely does oxygen get into the cells.* An exact comprehension of the role of "tissue respiration," is supplied by the function of a fundamental potential, mechanism consisting of three organs, the adrenals, the thyroids and the pituitary body. This postulate, original as it is and daring as it may seem, is explanatory, not iconoclastic, forming a contribution to simplicity, not to complexity. Sajous' philosophic presentation of the role of the internal secretions (as constituting the basis of the principles of medicine) is pre-eminently constructive, supplementary, helpful in reconciliation where hitherto discords impaired uniform beliefs. It cannot fail to clarify dubiosities, to reconcile seeming inconsistencies and to show how we may now confidently expect to reach a common basis for sound opinions held by earnest adherents to many diverse beliefs.

It is obvious that the central aim of medicine is to prevent, to check disease and thereby make the largest contribution to the conservation of human energies. This conception is the perfection of economics.

While infinite adaptations are permissible in artistic details, chaos must ensue from the most conscientious efforts unless uniformity in basic principles is adopted. The conservation of human forces is conditioned upon an exact concept of the inherent resources of the organism. These forces must be defined, estimated with due regard to their gradations in potentiality, and interpreted consistently in connection with universal experience, the whole affording practical methods of dealing with concrete life problems.

However complete these earlier observations, or prophesies, they would be sterile if they failed to exhibit the point at which the observed facts became related to the central idea; or unless we could by their aid grasp the potential of the facts so as to show their relevancy one to another and of each to the fundamental laws of body growth, development, change, retrogression, and these again to possible repair. Sajous has codified more simply and accurately than others the laws of life processes. Much remains to be known of fundamentals, but the keys he thus puts into our hands are not only helpful in themselves, but constitute a collection of practical working principles which each physician can utilize in solving daily clinical problems.

The theorem which is recognized to be the one most essential for solution is, as has been said, that of tissue respiration. The explanation of this dominant factor in all vital problems has hitherto proved elusive; even to the clearest sighted physiologists.[2]

It seemed to Sajous highly significant that the adrenal extractives exhibited marked affinities for oxygen. Upon close comparison of all existing data he found that the functionation of the adrenals was similar in all vertebrates, and could be regarded as the key-note not only to tissue respiration, but to the functionation of all other organs now classed as ductless glands also that the better known organs, such as the heart, lungs, liver, etc., "were, so to say, subsidiary structures, the instruments, in a measure, of these smaller ductless glands, and destined to fulfill the mandates of the latter." It was found that the oxygen laden adrenal secretion, dissolved in the plasma, was itself the essential agency which carried on all the oxydation processes of the organism. The oxygen-carrying power of the plasma (regulated as it is by the adrenal secretion) was shown to afford the clearest explanation of the possibilities of widest distribution. It could penetrate the minute vascular networks of all cellular elements, showing (an especially significant point) that plasma channels penetrated where blood vessels did not exist and to convey the essential oxygen.[3]

[2] Michael Foster in 1895 made this assertion as to the importance of oxidation: The function of the ductless glands, beginning at that time to engage general attention, were little known nor had their essential interrelationships then been recognized. Though the thyroid gland had been much studied, the adrenals had received less attention.

[3] Axis cylinders, dendrites, were found to contain a fluid identical with blood plasma; that neuroglia fibrils asserted

their identity as plasma capillaries. Thus is explainable how the brain and cord, the muscular contractile structures, the various glandular organs, including the liver, pancreas, spleen, gastric and intestinal elements, were all found to be so disposed as to allow the free circulation of the oxidizing plasma.

Because of many grave disappointments at the hands of physicans, a multitude of excellent people are constantly being driven into the hands of quacks; to use systems of practice based on mysticism and misrepresentation. Patent medicine makers are accumulating untold wealth at the expense of the unthinking and gullible. Yet drugs, chemical substances foreign to the body by which its processes are powerfully modified and controlled, are often absolutely necessary.

The reason why drugs are so frequently condemned is not due to their inherent defects, but to ours in not knowing precisely how they do the work, for good or evil, of which they are undoubtedly capable.

Lack of knowledge of the action of drugs does not indicate that the physician of to-day is a failure or that the substances he uses (oftentimes to save life or health) are valueless. We have long been aware of, and admit, our shortcomings. The modern physician be it known is a product of the highest scientific education and trained observation. He is a far more accomplished scholar than the layman is capable of judging. His training is extraordinarily long, arduous and exacting, but his difficulties transcend those in all other lines of exact science.

The aggregate presentment of medical facts, not only careful bed-side observations, but laboratory researches, far outweigh the evidence recorded in all other lines of exact science combined. This claim is admitted by many exponents of such allied sciences as chemistry, biology, and natural history. Why, then, is there apparently a contrariety of opinion in respect to the essentials of the science of medicine, not only among our critics, "the laity," but among ourselves? Why have many prominent medical men shown a steady loss of confidence in therapeutics—the use of remedies in disease? Treatment being admittedly the most important branch of medicine, it is by our proficiency in relieving diseased conditions that the world gauges our professional efficiency. The administration of drugs and rational remedies still remains, however, a mere fluctuating art. Physicians have been guided hitherto overmuch by mere experience. When a drug is found beneficial to relieve pain, spasm, vomiting, or other morbid manifestations, it then earns their confidence and thus empiricism has evolved.[4]

Why has therapeutics, the science of cure, alone lagged behind? It implicates more or less directly all the epoch-making discoveries of modern times. After all, diagnosis, pathology and other branches of medicine are useful only in so far as they enable us the better to select and use remedial measures. Why should it have been possible for a prominent therapeutist, Professor Sollman, to write only recently: "A generation ago therapeutics was an art promising to develop into a science. At present it cannot be classed as an art, nor as a science; it can only be classed as a confusion?" The answer suggests itself in view of what has been said: no Pasteur, no Virchow, no Lister—no dominant personality had yet appeared in that one paramount field of cure. In brief, therapeutics alone of all the great subdivisions of medicine, has hitherto lacked its master mind.

We can confidently predict better days for this branch. Sajous has given his undivided attention for twenty years to searching out and codifying the principles involved in these hitherto elusive problems of curing disease. Starting from an incontrovertible standpoint, the postulate that the body contains within itself ample powers of self-protection, regulation, even rejuvenation, he has sifted all data offered by biology, bacteriology, physiology, etc. He has also critically estimated those invaluable resources of information the accumulated clinical records made while meeting bed-side emergencies and in post-mortem findings. Thus he has himself discovered hitherto unknown functions of several most important organs along with hundreds of other facts which contribute directly to the saving of human life. Also by logical analyses and syntheses he has set in practical order hitherto unsuspected principles of action, which enables us to place the art of healing upon an exact, scientific foundation. Those who, like the author, have availed themselves of his therapeutic applications in daily work, can now proceed with certitude in the use of many drugs and rational measures. Moreover, his findings afford many new possibilities by exhibiting the hitherto unknown relationships between the sources of growth and development their morbid changes and also the causes of disease. He makes many things that before were only vaguely appreciated in the sphere of diagnosis, and finally supplies simplification and precision in applving these principles to the choice of remedies based on his principle of enhancing the inherent resources of the body.

Sajous has shown that our confusion as to the action of drugs was due less to a deficiency of sound data than to omissions of proper industry in searching the foundations of available knowledge. "Look into your storehouse of solidly established facts, experimental and clinical," he urges, "and you will find yourselves far richer than you believe. use the bricks and mortar which a multitude of painstaking investigators and clinical observers have thrown at your feet, to erect, as does the architect, a solid edifice, and your perplexities will disappear."[5]

His personal, experimental and clinical observations, and researches in literature have (for comprehensiveness and the number of scientific branches studied) probably never been equaled by one man. By scrutinizing, sifting and classifying all available evidence and eliminating defective physiologic and pharmacologic data, he has evolved logical relationships from an admitted chaos, and brought to light new truths, new forces, and made a number of genuine discoveries which place him, in the words of a recent editorial writer, "in

[4] In text-books no precise explanation is given as to how the remedy antagonizes the morbid process. Not only does this indecision afford a constant source of error (since it often happens that a drug indicated in one stage of the disease may be contra-indicated in another), but it leaves the conscientious physician in perpetual anxiety lest an agent prescribed at one time successfully (empirically) may at another prove more harmful than beneficial.

[5] In medicine, as elsewhere, "everybody's duty is assumed by no one, and here also a bold pioneer was needed to undertake the task if it were ever to be done. Sajous' two volumes on the "Internal Secretions and the Principles of Medicine" testify to the enormous labor involved—the product of twenty years' close thought.

the front rank of modern physicians and scientists."

His contributions to the field of therapeutics were preceded by a searching inquiry into the modes of procedure of pharmacologists, which revealed many dangerous fallacies and erroneous interpretations made by experimental workers. These could not fail to produce that confusion which mars this essential branch of medical science. He showed, for example, that drugs are not distributed to any one organ to the exclusion of all the rest, as is often taught (e. g., of digitalis); also he points out that the use of anesthetics during animal experimentation with drugs (vivisection) wholly vitiates and obscures many physiologic conclusions. Again, he found that when the usual experimental doses were thus studied they illustrated only poisonous phases of the remedy, and not its true therapeutic action; and also that pharmacologists totally overlooked the factor of poisonous waste products in the blood in estimating the action of various depressant drugs, etc. These are but a few flaws in the reasoning of experimentalists he brought to light. They exemplify the primary analytical phase of Sajous's labors, though but a tithe of the work he has actually performed.

It is when the synthetic phase of his work is estimated, however, that its full value to science is displayed. First and foremost, he has contributed to the solution of a paramount problem which has remained in abeyance nearly twenty-five centuries, a demonstration of the fundamental principle urged by Hippocrates upon the attention of the physicians of his day—Nature's own incomparable resources and means of curing disease. Up to within fifty years ago little had been done to explain this all-important though obscure potentiality. Pasteur having demonstrated the predominant role of bacteria in the producing of certain diseases, and as these in many instances were recovered from, it became a vital question to determine by what means this was accomplished; to make plain, in other words, how bacteria were destroyed in the body. The first explanatory discovery in this connection was contributed by Metchnikoff, who showed that certain white cells in the blood preyed upon bacteria and digested them; also that upon the efficiency of this defensive process the issue of the disease largely depended. This notable addition to our knowledge was followed by another of equal importance (the product of a galaxy of brilliant German, French and Italian investigators), viz., that the liquid portion of the blood also contained substances which attacked bacteria and rendered them vulnerable to the aggressive white cells, Metchnikoff's phagocytes.*

The first practical step was thus made in the process of demonstrating that the body was supplied with available auto-protective dynamics. But how could the production of these defensive agencies be controlled? Could we hope by means of our remedies to enhance their power? Should we ever be able to cope with an infection by means of remedies which would provoke an increase of phagocytes and poison destroying substances in the blood and lymph?

This is where Sajous has contributed to our practical knowledge a systematic conception which will, judging only from facts and results already demonstrated in practice, completely transform our ideas and explanations of therapeutics. He showed not only that all animals, at least from mollusks to men, were provided with an apparatus (as admirably complete as any organ of special sense) having for its purpose to insure the destruction of any poisonous substance or harmful agent which may enter the blood (whether introduced from without or formed in the body itself), but also that the substances which this mechanism utilizes to destroy germs, their toxins and other poisons, are the identical antibodies found in the blood by Pfeiffer, Buchner, Bordet, Ehrlich and a multitude of others, together with the phagocytes whose function Metchnikoff had revealed. Gruber and, later, Sir A. E. Wright (of opsonin fame) had held that these antibodies were "internal secretions" of some sort. The latter investigator urged that if pathologists "knew the laws by which such substances were produced, they could call forth a production of those substances." Sajous has not only revealed the source and identity of these secretions, but he has also pointed out the laws which govern their production, solving simultaneously another great problem, viz.: the precise functions of the ductless glands. The decision as to this point is not that of mere tyros, but of men such as Launois, Mulon, Lorand and others who have made the ductless glands their life study.

How are these discoveries related to the physiologic action of drugs?

As is now generally known, Sajous found that the autoprotective mechanism of the body was composed of three organs whose functions had hitherto remained obscure: (1) The adrenals (which overlie the kidneys), which were found to supply the blood with the secretion which takes up the oxygen of the air to carry it to the tissues (thus forming the familiar oxyhemoglobin); (2) the thyroid and parathyroids, found jointly to supply a secretion having for its purpose to increase the vulnerability of all cells (bacteria as well as tissue-cells) to the effects of oxidation; and (3) the pituitary body, a pre-eminently sensitive organ located below the brain, found to be connected with the adrenals and the thyroid by nerves, and especially to govern their functional activity. It is plain that, under these conditions, any influence capable of exciting or depressing the sensitive adreno-thyroid center in the pituitary body should correspondingly enhance or depress the function carried on by the adrenals and thyroid, namely, general oxidation. Now, this is precisely what Sajous has shown several agents are capable of doing. Thus, just as we know that ergot raises the blood pressure by *exciting* the vasomotor center, so has he found that mercury, thyroid extract, iodin and other drugs are capable of exciting the adreno-thyroid center and thus of increasing general oxidation and metabolism.†

*The term opsonin (from opsono, "I prepare the food for") is now much used to describe the process of rendering these invading bacteria and the toxins they form ready for destruction in the blood-stream. An elaborate series of bacteriologic procedures were recommended originally by Sir A. E. Wright, resulting in the preparation of "bacterial vaccines," which, made in accordance with the equally elaborate "opsonic indices," learned from the blood of the patient, are injected for curative purposes. This involves a most complex, specialized method of relief.

†Again, just as we know that veratrum viride causes general vasodilation by depressing the vasomotor center, so has he shown that chloral hydrate, arsenic, hydrocyanic acid and other drugs depress the adreno-thyroid center. This does not mean that all these agents excite or depress the adreno-thyroid center only; if this were the case all would act similarly. Sajous has shown that apart from a few, they act simultaneously upon other centers. Thus, while

strychnin excites the adreno-thyroid center it excites also the vasomotor center, and in large doses the spinal cells as well. Its physiologic action is the aggregate of these effects, just as that of other drugs is determined by their mode of influencing simultaneously various centers for which they have chemical affinity.

What opposition can be offered to Sajous's conception of the physiologic action of drugs, one scientifically deduced from and supported by an endless array of exact experimental and clinical facts? Only an unwillingness to abandon old beliefs or the prevailing obscurity as to their precise action, the "confusion" to which Sollmann refers.

It is to the general practitioner, however, that Sajous's contributions to science should prove most valuable. He thus simplifies and supplements their daily working principles. This is the goal toward which all his efforts have tended. The growing confirmations of practical experience and the increasing demand for his works indicate that the trend of opinion is steadily in favor of his clearly expressed views and discoveries. What greater prerogative could we crave than the power to govern at will the forces conditioning bodily defenses, in order (1) antagonize scientifically and nullify infections (early or late) by increasing the efficiency of the one defensive mechanism (the adrenal system) instead of, as is now done, leaving our patients exposed to the destructive action of bacteria and toxins; (2) to arrest the pain-giving disorders, gout, rheumatism, neuralgia, migraine, etc., or the convulsive diseases (epilepsy, etc.) by employing agents which are known to materially assist in breaking down waste products and insuring their ready elimination; (3) to counteract profound weakness, neurasthenia and other evidences of lowered vitality, including the tendency to malignant growths, by intelligently activating metabolism, i. e., the vital process itself?

Sajous (an American clinician, let it be remembered) has thus endowed the practicing physician himself with all these powers. His demonstration that opsonin, amboceptor, compliment all other *bona fide* protective substances or defensive agencies, the so-called "antibodies," are the result of definite activities originating in the ductless glands, and that we can increase their functional activity at will by many of the drugs in common use (those of our Pharmacopoeia). . . . This statement is abundantly verified in practice, as those of us who have conscientiously followed his teachings well know. In short, these clear, simple, exact teachings replace the empirical use of drugs (the one great stigma of modern medicine) by furnishing an accurate system of therapeutics in which precise thinking is the guide and not mere empiricism, and in which scientific precision is constantly available.*

As Sajous stated in his recent address before the American Therapeutic Society (June 4, 1908) after deprecating the pessimistic trend of the day concerning the use of drugs in disease, "No experienced practitioner will deny that nine-tenths of our professional usefulness is based on pharmaceutical remedies. Not only do our patients crave active, militant protection and relief in the hour of suffering, but the physician knows through generations of teachings by practical experience that drugs are his legitimate and often most trustworthy weapons of warfare, the strongest shield he has to interpose between his patients and the fell destroyer." But it is through his labors that they have now become "trustworthy weapons of warfare." The sooner we realize that fact, the sooner we can feel confident that we have entered upon a new era in the control of deranged bodily activities and therefore a new era in practical medicine.

* More than likely there will be discovered far more powerful curative agencies than are now known, but we can make vastly better use of those in our possession by this precision of knowledge as to their action.

MEDICAL MIRACLES.

BY JOHN B. HUBER, A.M., M.D.

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PART I.

WE have so often heard reports of remarkable achievements by faith-curists, mental healers, Eddyites and the rest, that we have quite lost the faculty of being astonished over them. From our viewpoint as physicians, who have been taught the essential principles of physiology and pathology, who realize the extent to which remedial agencies are potent, and their limitations, we can but conclude that these alleged cures, if they have been correctly reported, must have been brought about by other than natural means—that is, they must have been miracles. At one time the subject interested me to the extent that I investigated some of these seemingly marvelous recoveries from accident and grave disease; and I have thought my colleagues might be interested in the deductions which I made from my findings.

I. The tendency of life in all its phases—mental, moral, spiritual, physical—is in the direction of health, and away from disease. Neither human nor any other kind of exercise could be maintained upon basis other than this; else all life would, by a sort of geometric retrogression, become quite extinct.

II. In many affections, especially those of a purely functional sort, the natural recuperative forces (which our professional forbears were wont to term the *vis medicatrix nature*) are in themselves sufficient for a cure. To realize how potent are these recuperative powers, not only in the presence of functional disorders, but as well in diseases characterized by extensive destruction of important organic tissues, one should read the address which Dr. S. J. Meltzer made before the Harvey Society in New York city on "The Factors of Safety in Animal Structure and Animal Economy." * It will then be realized, as perhaps never before, how and why it is that most of us complete the allotted span of life despite the many diseases, accidents and other untoward influences continually besetting us. These intrinsic reserve forces, these factors of safety, the measure of which is generally unsuspected, are constantly maintaining the economy in a fairly normal condition. From time to time their existence has been recognized; but surely there has never before been so scientific an exposition of them as Dr. Meltzer has presented. He borrows the term "factors of safety" from the mechanical engineer, who thus designates the margin required in constructing engines, bridges, houses and the like.

In mechanics it is calculated that a given structure

* Published by J. B. Lippincott & Co.

should be capable of withstanding the stresses not only of reasonably expected maximum loads but also of six or seven times such loads. The factor of safety in mechanics is based upon finite human ignorance of what might happen; and upon human forethought to meet unexpectable emergencies. And certainly the great cosmic engineer has provided also, and it would seem for like reasons, such factors in the human machine, infinitely more complex as it is by comparison with those made and worked by men out of inorganic material. It were much more difficult to foretell the possible disasters which may be visited upon the human machine—the strains of over-exertion and of exaggerated emotionalism, the stresses of environment, the attacks of parasitic organisms, physical injuries—many adverse factors which the race has been powerless to prevent, concerning many of which we have been in ignorance—ignorance which, the scientist may say with just pride, is yearly becoming more and more dissipated. And this despite the amazing obstructions which are put in the way of enlightenment by the foolish and the unscrupulous.

A number of organs are bilateral—the eyes, the ears, the kidneys; here in itself lies a most efficient factor of safety. One kidney has repeatedly been removed with entire impunity, when the other kidney has been ascertained to be normal; this has become a commonplace of surgery. The lungs are organs of supply and elimination of the first order; yet life may continue despite enormous destruction of its tissues, if only the disease which causes its destruction be arrested; a pneumonic process may consolidate an entire lung without seriously impairing the respiratory function. The thyroid gland is made up of four or five times more tissue than is necessary for the adequate maintenance of health and life; the suprarenals some ten times more; all but one-tenth of the pancreas may be removed without ill effects. Three-fourths of the liver may be removed without the development of symptoms indicating serious interference with any one of its several functions. Such are among the observations which Dr. Meltzer has made.

Then there are such protective forces within the body as phagocytosis—the avidity with which the white blood cells devour the invading germs; the office of the opsonins, which render the bacteria assimilable by these phagocytes; the reaction which in any infection the toxin of the specific germ excites in the tissues, with the result that the individual who has once suffered from that infection (as, for instance, typhoid or yellow fever) becomes throughout the remainder of his life immune to it.

And in the bodily conditions which are dominated essentially by psychic states we find the same conservation of forces. How else could those mediaeval Flagellants have endured the dreadful and prolonged scourgings which they invited when under the influence of intense emotions; how else could the victims of the dancing manias in those times have danced in swaying circles many hours at a time: how else could the Convulsionaries of a century or so ago have been able to bear colossal weights upon their bodies, which, as in opisthotonos, they bent bridge fashion? Is it not in the general experience that under stress of fright or other tremendous emotion things have been accomplished of which one would never have imagined himself capable? Is it not that we discern latent potentiality in a man when we say of him that "the half of his strength he put not forth"; or of another that "his strength is as the strength of ten?" Consider how Napoleon led his army across the Alps, his troops believing themselves utterly spent, could not carry their bodies another step. It was then that this magnificent though untutored psychologist had his band play "The Marsellaise." Its strains amid those snow-capped heights were a mighty stimulus to courage and patriotism, whereby such strength was awakened in the rank and file, as they had not dreamed themselves possessed of; so that with triumphant shouts they finished the titanic task their general had laid upon them.

III. The influence of the mind upon the body is at least as potent in sickness as in health; and it is often an effective factor in the alleviation of symptoms and in the cure of nervous and functional affections. Let us here, by the way, include in the term mind the will, the intellect, and the emotions. If the mind of the sufferer can be composed by reasonable suggestion, by judicious persuasion, by wise explanation; if his attention can be diverted from distressing symptoms, a most salutary reaction can be brought about in a perturbed or in a really sick body. To this end it is essential that we inspire the sufferer with perfect faith in our abilities and in the sincerity of our belief in his cure.

A thought or an emotion directed upon any given part of the body increases the functional activity in that part. The nerve filament—the psychic messenger which transmits the impulse from the brain—determines a flow of blood to the part; cellular secretion is increased, there is abnormal activity, and symptoms (the signs by which abnormality is manifested) are complained of. These symptoms may be dissipated by a diversion of the attention from the affected part. Thus a woman is disturbed by the beating of her heart; her progressively exaggerated attention becomes concentrated upon it; she finds that the beats are increasing greatly in number; instead of the normal frequency of seventy or eighty she can count a hundred and twenty. The physician is sent for; and during those eternal moments before his arrival the naturally vivid feminine imagination is further accentuated by the emotion of fear.

She recalls the frequency with which the lay press announces death from heart disease. (In these accounts the diagnosis has usually been made by some astute policeman.) The physician presently comes; and finds a pulse which has become uncountable. He learns that the sufferer's attention has been directed to her heart in a most exaggerated way. Perhaps something she has eaten has caused a flatulence, which distends the stomach so that it presses upward, and causes the distress which is referred to the cardium. Perhaps a tea intoxication has produced a cardiac neurosis. The heart is examined; sympathetically and with impressive frankness every idea, every emotion which has originated the functional neurosis is discussed. The part which the indigestion or the tea-tippling has played is explained: the sufferer is assured of the truth that death from heart disease is in fact one of the rarest of occurrences. The physician's assurances are believed and accepted; the excessive pulse then gradually subsides and returns to the normal, the cardiac distress disappears; and with the administration of a simple anodyne the matter is ended. We all have such experiences in our practice.

The psychologist has taught us how important a factor attention is in these cases. When persistently concentrated upon any organ an affection will be excited in it; and on the other hand a wise diversion of the attention from it will oftentimes dissipate the sufferings referred to it. Thus, at Appomatox General Grant is said to have suffered dreadfully from rheumatism. But when General Lee sent word of his readiness to surrender, the rheumatism was forgotten in his great joy that the awful war was now to be definitely ended. Thus John Hunter relates how he was invited to go to be magnetized by Mesmer: "I first refused, because the spasm on my vital parts was very likely to be brought on by a state of mind anxious about any event . . . and I feared it should be imputed to animal magnetism. But considering that, if any person was affected by it, it must be by the imagination being worked up by the attention to the part expected to be affected, and thinking I could counteract this, I went; and accordingly when I went I was convinced by the apparatus that everything was calculated to affect the imagination. When the magnetiser began his operations, and informed me that I should feel it first at the roots of my nails of that hand nearest the apparatus, I fixed my attention on my great toe, where I was wishing to have a fit of the gout; and I am confident I can fix my attention to any part until I have a sensation in that part. Whenever I found myself attending to his trick I fell to work with my great toe, working it about, etc., by which means I prevented it having any effect upon me." We here have the gist of the whole subject of psychic influence over diseased conditions.

IV. Pathological changes or inflammations in any organ are likely, among other factors, to be conditioned upon increased blood supply to that organ, or increased secretion in its cellular elements. This is the way disease usually comes about, although many other factors, as we know, play their part. Yet we know that thought has an influence upon the behavior of an excretory cell, the manufacture of a blood-corpuscle, the generation of a drop of lymph; abnormal thought is therefore a factor in disease. "I remember," states the Autocrat of the Breakfast Table, "a young wife who had to part with her husband for a time. She did not write a mournful poem; indeed, she was a silent person, and hardly said a word about it. But she quietly turned of a deep orange color with jaundice."

Conversely we may readily understand that a grave organic disease may be obviated in its incipiency, if we can divert the attention of the sufferer from the part affected. Moreover, when an organic or structural disease is manifested, healthful suggestions are certainly adjuvant to other and more tangible medication. And organic diseases are always attended by functional disorders, which are effectively dealt with by salutary suggestions—and such suggestions which are certain also to hasten convalescence from grave illness. But in advanced diseases, where the tissue pathology is gross and palpable, where structures are obviously broken down, it were madness indeed to depend only upon mind for a cure. "If thine eye offend thee, pluck it out; if thy right hand offend thee, cut it off, and cast it away." Faith alone will not make these manifestly diseased members whole and strong; here only surgery will serve.

V. Obviously, then, suggestion is equally powerful over the economy for evil as for good. It is, therefore, a dangerous means when used by ignorant or erratic or unscrupulous people, utterly untrained to cope with disease, many among whom have themselves disordered minds, quite all of whom are utterly unable to make a sensible application of remediable means to morbid states. While health can be suggested, pains, untoward symptoms and diseases can quite as well be induced; mental states which have been rendered abnormal may in themselves induce profound and disastrous organic disturbance. And nervous perturbations may be induced in the presence of serious disease, which will certainly aggravate the disease. Those who have read the histories of Eddyism and like movements will believe me when I say that there are plenty of vicious tricksters who understand the power of misdirected suggestion.

VI. Many affections which seem organic are pure neuroses, such as neurasthenia (nerve exhaustion) and hypochondriasis; and many affections which to the patient seem very serious are merely functional disorders; due to unnatural and unhealthful modes of living. Bilious attacks produce a long train of symptoms; and while these endure the sufferer is very sick, indeed. The dyspepsias are like to cause more suffering than would many an organic disease. Many heart affections termed by the miracle-monger grave diseases, are but neuroses due to gastric fermentation or to an overwrought imagination, or to inordinate drinking of stimulants. One of my colleagues cures many of his heart cases by "requiring the tea kettle to be taken off the stove."

VII. Many diseases, especially infections, are self-limited; after so many days, varying according to the virulent power of the causative germ, the disease is spent. But this is not because of any occult or miraculous influence. And many diseases tend to get well naturally, as we have seen; here the physician's work is to supplement and assist the natural recuperative powers. But he must also anticipate crises, when nature has to be helped, by drugs, by any variety of therapeutic means. When an effusion has supervened upon a pleurisy, the patient must die if the fluid be not removed.

VIII. In order for an intelligent application of faith cure, or any kind of cure, we must, to begin with, know what we have to deal with; we must make a diagnosis —a step which the "healer," with pride unapproachable by any other foolishness in all human experience, vaunts his utter ignorance of. Has homely common sense ever been so impudently affronted. If we are to dissipate a headache by suggestion we must first find if it depends upon an error of refraction, or upon a nasal spur, or a serious cranial lesion. How can we offhand remove a pain in the chest if there is phthisis underlying it: or one in the back if we ignore the tumor which it manifests?

There are at present a series of "church clinics" being held in Boston and in other communities, which are a refreshing exception to the average faith cure movement.

For my part, and for reasons I shall not here discuss, as being apart from my present thesis, I do not believe these church clinics well advised. However, it is important to observe that the rector of the church under whose auspices these clinics were begun, the Reverend Doctor McComb, was before beginning his ministry, a

college professor of psychology and of the history of philosophy; he therefore entered upon this clinical work peculiarly well-grounded in a knowledge of consciousness, (for that is what psychology is—the study of consciousness), and of such philosophy as concerns itself with the interrelation of mind and body. These clinics have been notable, both by reason of their projector's obvious sanity and absolute sincerity of purpose; wherein they are as wide apart as are the magnetic poles from all the alleged faith and mind cures, the spiritual healings and the multitudinous buncoings so rampant nowadays, and nowhere else so numerous, and so thriving as in Boston, that most congenial culture medium for such follies. Never in human history probably have these therapeutic insanities been so prolific as they are among our people to-day, in this perhaps the most intellectual of all eras: never has the aphorism been so apropos as here, that knowledge comes but wisdom lingers.

. This clergyman and his reverend associate are quite unique in that they make no claim to perform miracles. They have called to their aid eminent physicians skilled in nervous diseases, who make preliminary examinations and thus exclude all having, as the basic causes of the sufferings, anatomical, or organic, or structural lesions, or such surgical diseases as require operation; thus scientific diagnoses are made before psychotherapy is attempted. These devoted men are again unique in that they ask no price for what they can do; at every turn they evidence an admirable and wholesome zeal to meet the altruistic and humanitarian obligations which their Master has laid upon His disciples. I do not think the record would be complete, however, if it does not contain a statement that most sufferers from purely psychic disorders are made well quite inconspicuously in the consultation rooms of reputable physicians, who constantly employ psychotherapeusis, (what physician could practice for a day without it?). But suggestion is only a part of the physician's armamentarium, to be used in appropriate cases either alone or in conjunction with other means of cure; among which are drugs, which despite the foolish denunciations of such people as Mrs. Eddy, are quite as divinely appointed as is faith cure or any other means of healing.

IX. Hysteria is an affection in which psychotherapeutics is very effective; here "ideas control the body, and produce morbid changes in its functions." Nowhere else is wise suggestion so salutary; nowhere else are the mental tricks of the ignorant so pernicious. It is generally women who are the sufferers, though many men are also hysterics. An unfortunate heredity is often an underlying factor: as are also an uncongenial environment, unhappy family relations, unreturned affections, emotions unaccustomed to control by discipline. Morbid and perverted imaginings produce all sorts of aberrations: a vicious education, abnormal religious enthusiasm, beliefs in occult powers, in the fantastic tales of sorcerers, in ghosts, play a sad part in inducing a chaotic psychism. As a result these unfortunate people display persistent hallucinations and delirium, alternating perhaps with extraordinary emotional outbursts. They see visions, hear voices, converse with imaginary persons, relate most solemnly imaginary events, make amazing and very serious charges; because ecstatic, beatific, fearful without reason. Moral shocks are likely to be followed by hysterical explosions. Severe physical injury by inducing shock is oftentimes followed by hysteria. Indeed, we may look upon hysteria as a condition of prolonged, chronic and attenuated nervous shock. The conditions induced by excessive emotion are here identical with those resulting from acute injury.

The hysteric may have epileptoid attacks; but she is likely to fall—not suddenly, as in epilepsy, but comfortably enough, upon a soft spot, as a sofa or an armchair; the hysteric will take good care not to do herself an injury. There is quivering of the eyes, and lips, and of the hands and feet, grinding of the teeth, moaning and congestion of the face. All these symptoms are accentuated in the presence of a group of sympathetic sisters. We are all familiar with these phenomena. The hysteric seizure may be followed by a trance enduring hours or even days. Catalepsy may then be evidenced; the victim may seem as if dead. If a "healer" is in the vicinity, we may learn of a miraculous restoration to life.

In hysteria the special senses manifest all sorts of aberrations. Taste and smell may be in abeyance. There may be hysterical deafness, or loss of voice may come on suddenly, may persist for years, and may be as suddenly recovered from; these are cases in which miracles are ordinary enough. The retina may be excessively sensitive; retraction of the field of vision is common, and may persist for years; there may be hysterical blindness. And those to whom it does not occur to have an examination made to distinguish between a functional derangement and a real destruction of organic tissue, are ready to credit miraculous cures of blindness. There is the hysterical cough—dry—persistent, and croaking. Sometimes the sputum may be tinged with blood; and then a miraculous cure of consumption may be announced. There is hysterical breathing, with no marked distress, however; and the accompanying pulse, which in real disease would be quickened, is quite normal. There are all sorts of inordinate cravings; there is gagging and difficulty in swallowing. The heart palpitation, which the hysteric experiences, the flushing, the sweating, even the hemorrhages in the skin—all these symptoms result from the influence of a chaotic mentality upon the sympathetic nerve. There is often hyperaesthesia; on the other hand, the skin may have no sensibility at all; such patients don't mind pin-pricks Such anaesthesia may be evident on but one side of the body; a hysteric plunged into a bath may feel the water on but one side only; or in drinking water she may observe that the glass is broken, the sensation of touch ceasing at the middle of the lips.

There is no form of structural paralysis which this most protean of affections may not simulate. Hysterical paralysis may set in quite abruptly. It differs from the kind characterized by real structural changes in that in the former the muscles exhibit normal electric reactions, and do not waste away. The loss of power is not absolute; the legs can usually be moved, though they do not support the sufferer. These hysterical paralyses generally come on through suggestion, by seeing or reading of, or in other ways learning about cases of real paralysis. From such knowledge hysterics may simulate the symptoms of locomotor ataxia. Osler, in his work on the Practice of Medicine, gives vivid examples of how hysterics present spasmodic contractures of groups of muscles, so that extensive pathological

changes may seem to have taken place. The arm may be flexed at the elbow or wrist, the fingers tightly grasping the thumb in the palm; or the fingers may be hyperextended; the foot may be inverted, with the toes strongly flexed; there may be contractures of the muscles of the hip, shoulder or neck; of the jaws or of the tongue. There may be rhythmic hysterical spasm simulating true chorea, the imitative movements having arisen from seeing a case of the latter disease. There may be rhythmic movements in the arms, or in the neck and jaw. There may be arching of the back, retraction of the head, bowing or salaam movements. The legs may be raised rhythmically, several times a minute.

Surgical diseases are often simulated. The sufferer may be under the dominance of a fixed idea that his leg has been broken; his leg may suddenly have given way under stress of fatigue or reflexly, as may happen to any of us. And because of this obsession the hysteric is really unable to put his foot on the ground, or bear his weight upon it.

There are all sorts of hysterical joint affections. The knee or the hip may have been strained in a trifling manner; and the imagination may develop from this injury an immobile, sensitive and even swollen joint. Attention directed upon a part soon increases sensation in it. If we anaesthetize a patient who has such a hysterical joint dislocation the joint will resume its normal shape; to become dislocated again immediately the sufferer regains consciousness, and the obsession resumes control. And here, as elsewhere in the economy, hysterical manifestations may be superimposed upon a real structural lesion.

THE THERAPEUTICS OF MORPHINISM.*

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THE proper treatment of morphinism is daily increasing in importance because the prevalence of the addiction is rapidly increasing. Before the invention of the hypodermic syringe, about fifty years ago, morphinism was little known in this country. Today it is found in every town and hamlet. And this increase has been greater the past ten years than during the previous forty years. Not only is it becoming a national curse to America, but it is spreading throughout the world. Beginning with the poppy of the East, opium and its derivatives have encircled the globe, carrying its fatal blight to all nations. It has become a world-wide menace to mankind. To such proportions has this evil grown that last February the foremost nations held an official International Opium Conference at Shanghai for the purpose of taking concerted action to check the spread of morphinism. Whether much or little can be accomplished by legislative means, the province of the physician in this matter is to restore to health those who are now enslaved by this potent drug.

The cure of morphinism consists in stopping the administration of morphine for a few weeks. This sounds simple and easy. "If thine eye offend thee, pluck it out." Many people suppose that morphine using is only a matter of self-indulgence, and that any addict who has a proper amount of will power and self-respect can easily stop its use at any time. I have even known of a physician advising a morphine patient to stop using the drug with the *sang-froid* with which he might suggest to a dyspeptic that he avoid the eating of mince pie. But all this shows a complete misunderstanding of the situation. Morphinism is not a mere habit, but is a most serious pathological condition, and it is as absurd to ask an addict to stop the use of morphine unaided as to ask him to amputate his own arm.

The two methods of treatment heretofore most commonly employed are the abrupt withdrawal and the gradual reduction methods. There are serious objections to both plans. (1) To abruptly withdraw morphine from a conscious patient it is necessary that he be locked up or otherwise restrained. The suffering is so intense that no one could voluntarily endure it. This method is comparable to performing a surgical operation without anaesthetics while the patient is strapped to the operating table. It is barbarous in the extreme. (2) The gradual reduction method is long-drawn-out misery. This plan consists in giving the patient a little less morphine each day till zero is reached. The result is that the suffering increases in indirect ratio to the size of the dose. Each day the patient feels that he has reached the limit of endurance, and each day he knows that the next will be still worse. The patient will not suffer so accutely by the gradual reduction plan as by the abrupt withdrawal, but his suffering will be more prolonged. Both plans are distressing to the patient and unsatisfactory to the physician.

No method has yet been devised for eliminating morphine from the system of an addict without suffering, *if he is fully conscious.* It is, therefore, clear that if we would cure morphinism without pain the patient must be kept asleep or somnolent during the painful withdrawal period. This is exactly my plan of treatment, and it works with certainty and precision. When the patient awakes, he finds the painful period has passed while he was asleep, and the craving for morphine is gone.

In the treatment of morphinism the kernel of the whole matter is the accomplishment of the withdrawal without suffering. Practically all morphine patients want to be cured, but they dread the suffering that has heretofore accompanied the process, and hence they postpone or decline treatment. But we can now assure them that they can be thoroughly and permanently cured without the distress of "gradual reduction" or "abrupt withdrawal" by the employment of this "narcotic method."

The hypnotic remedies employed depend on the condition of the patient and his peculiar idiosyncrasies. No one remedy is sufficient in any case, but a combination of hypnotics is required. Hyoscin and the bromides are often thought of in this connection, but I do not approve of either. Hyoscin is very uncertain in its action, sometimes producing sleep, but more often causing delirium. Some authorities consider it a dangerous drug when exhibited in large and repeated doses. It is certainly a very unsatisfactory remedy. The bromides are heart depressants, and as hypnotics are inefficient. But to name all the remedies that at times may be required would be to enumerate most of the hypnotics in the materia medica, as the requirements of individual cases are so diverse.

This narcotic method of treatment is not only pain-

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less but it is sure. The old gradual withdrawal plan caused the patients so much distress that at last their courage would fail and they would usually manage if possible to get morphine clandestinely, thus putting themselves back into the same condition in which they were when they began treatment. And this may be repeated again and again. But nothing of this sort can occur when my method is employed. Morphine patients, like some of the rest of us, are "good when they are asleep." While in the somnolent state they have neither the desire nor the ability to smuggle morphine. And when they awake the morphine craving is permanently eradicated. Their outlook on life has completely changed. No longer is their one thought an anxious desire to escape suffering by means of the drug. They now have an opportunity to turn their thoughts elsewhere. They awaken to the discovery that all their mental processes had been tinctured by the morphine influence, and that by the elimination of the drug their thought and sight have been clarified and made normal. Like John on Patmos, they behold "a new heaven and a new earth." Once more they really live.

The after-treatment is very important. The withdrawal of morphine by any method leaves the patient weak and prostrated. This is inevitable and easily understood. After an addict has relied upon morphine stimulation daily for years, its loss must produce a pronounced reaction. Therefore it is essential that the patient should remain under treatment in the sanatorium till these symptoms are overcome. If he return home in a weak condition he is very likely to relapse. When the patient awakes to the realization of his freedom from the drug, he is apt to have a feeling of exhilaration and over-confidence which makes it difficult in some cases to hold him under treatment till he has been restored to his normal strength. But unless this after-treatment is insisted on no permanent benefit will result. If, however, he persists under sanatorium treatment a sufficient length of time, he can easily remain a total abstainer from morphine the rest of his life. I say "sanatorium treatment" because it has been thoroughly demonstrated that any form of treatment for morphinism outside of an institution is a vain and hopeless affair.

During the after-treatment I employ physical therapeutics in addition to the remedies of the pharmacopeia. I have found high-frequency electricity, light therapy and mechanical vibration of especial value during this period.

In conclusion, I would submit these propositions:

1. Morphinism is more curable than most chronic diseases.
2. It can be cured promptly and safely without the suffering formerly supposed to necessarily accompany the process.
3. As artificially induced sleep has solved the problem of painless surgery, so the induced somnolent state, herein described, solves the problem of the painless withdrawal of morphine.

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The Genitalia should always be examined (Am. Jour. Dermat.) in male infants especially, when they are irritable and manifest convulsions; one may then find a condition demanding immediate attention, probably adherent prepuce; in female children an adherent prepuce of the clitoris will have the same effect; it is then best to circumcise without delay.

MEDICINE OF THE EGYPTIANS.

BY F. B. BRUBAKER, M.D., MIFFLINBURG, PA.

EVERYTHING in medicine is connected, or should be connected with therapeutics. Anatomy, physiology, pathology, etc., must all converse toward therapeutics as a common center. Each of these as indeed of all others contributary thereto has an effective value only in proportion to the succor it gives in the treatment of disease. This is a truth which needs no demonstration, it is barely necessary to announce it; nevertheless, it has been forgotten or mistaken sometimes by very eminent minds. We see the ultra sectarians of the autocratism of nature make the perfection of the art consist in the knowing in advance and predicting the course, crisis and probable issue of a disease, limiting to some etxent the duties of the physician to the idle contemplation of the sufferings of the patient. We see the blind partizans of another school attach such a high interest to the determination of the anatomical lesions whose traces are seen after death that they lose sight of the treatment, or say a word or two about it for forms sake only and occupy themselves exclusively with the alterations observed in the dead body. It is to the zealots of this school that the sentence of Asclipiades may be justly addressed, viz.: "Your medicine is only a meditation of death."

We have found in our contemplation of those physical forces which go to make up the life of the individual, or at least are inseparable therefrom, that the phenomena of heat occupied our latest deductions and on which we make our therapeutic footstool. But before entering into a discussion of the principles appertaining thereto, and by which therapeutic doctrine may readily find its true foundation, it will be necessary for us to trac ethe history of medicine somewhat at length, that we may not lose our foothold on the more dangerous heights to which we ascend.

We read in the Bible that when Jacob died, "Joseph commanded his servants, the physicians, to embalm Israel, and forty days were fulfilled for him, for so are fulfilled the days of those that are embalmed." Thus at the death of the Patriarch Jacob, about 1700 years before the birth of Christ, Egypt possessed men who practiced the art of medicine. This passage in the writings of Moses is the most ancient authentic monument that we possess of the healing art, all that is more remote in the history of Egypt, and of other nations as well, is enveloped in obscurity and uncertainty, in so far at least as medicine is concerned. Thoth, or Theyt, whom the Greeks named Hermes, and the Latins Murcurius, passed among the Egyptians, as the inventor of all sciences and arts. He has been supposed to be the author of an encyclopedic collection in which it is said was comprised all the wisdom of the ancient priests of the country. But this collection has been lost, at an unknown period, and no writer, who refers to it, speaks of having seen it, all refer to it as traditionary. There are also various statements as to the number of books of which it was composed. Some say there were twenty thousand; others twenty-six thousand; and still others a lesser number; however it appears difficult if not impossible to reconcile these opinions so adverse, nevertheless some have attempt-

ed so to do, among others Galen, Horoius and Bochard, but none of their explanations are reliable. Neither is there a better agreement as to the person of Hermes, nor of the time in which he lived. According to many conjectures, which have about equal claims to truth, this personage was Bacchus, Isis, Orus or Apollo, or Shem, the son of Noah. Others think that Hermes was a god, to whom the Egyptian priests dedicated all their scientific productions by inscribing his name at the head of their writings.

M. Houdart speaking of the hermetic enclycopedia gives the titles of forty-two volumes the last six of which treated of medicine and embraced a body of doctrines, complete and well arranged. The first treated of anatomy, the second of diseases, the third of instruments, the fourth of remedies, the fifth of diseases of the eye, and the last of diseases of women. "It is not necessary to suppose," he adds, "that medicine reached, suddenly, in Egypt, this degree of perfection. As was common among other people of high antiquity, they commenced, in the first place, as we learn from strabo, by exposing the sick in public, so that any of those that passed by, that had been similarly attacked and cured, might give their advice for the benefit of the sufferers." At a later period, this plan was much better calculated to accelerate the progress of the art for all who were cured of disease were reuqired to go and make an inscription in the temples, of the symptoms of their disease, and the curative agents which had been beneficial to them. The temples of Canopus and Vulcan, at Memphis, became the principal depots of these registers, and they were kept with the same care as the archives of the nation. For a long time every one had the privilege of going to consult them, and of choosing for his sickness, or that of his neighbors, the medicaments of which experience had confirmed the value. This method was very good, notwithstanding its inconveniences, to advance science, because it rested entirely upon observation. In this way must have been collected a prodigious quantity of facts, from which might be deduced correct principles in the practice of medicine, and this indeed was brought about. The priests who were charged with the study of these observations did not hesitate to seize upon the exclusive practice of the art, and when they had collected a great mass of facts, they formed a Medical Code, the fruit of the experience of ages, which is called by Diodorus, of Sicily, the Sacred Book, from the directions of which they were never permitted to vary. If, in following the rules there laid down, they could not save their patients, they were not held responsible but according to Diodorus they were punished with death if, after departing from them the result did not justify their course. It is usually supposed that the practice of embalming which goes back to an immemorial period, was well calculated to familiarize the Egyptian priests of that early day with anatomical researches. But Sprengel has justly observed, that this process was too rude to have contributed very much to the advancement of the science. He adds, that according to Herodotus, the people had a horror of these proceedings, and that they pursued and threw stones at the parachute who made the incision, through which were introduced into the corpse the ingredients destined to dry and preserve it. This subaltern operator was obliged to fly immediately after he had done his work, in order not to become the victim of the animadversion of his assistants. When Pliny assures us that the kings of Egypt permitted the opening of the corpse, for the purpose of discovering the causes of diseases, he always means the Ptolomies under whose reign anatomy was carried to a very high degree of perfection.

According to the authors just named there were three sorts of embalmments, viz.: that of the first class, reserved for men of quality and wealth, which cost one talent; that of the second class, reserved or adopted by families of moderate means and which cost about twenty mines; lastly, a mode of embalmment for the poor, which consisted simply in washing the body and macerating it for seventy days in lye. In the process of embalming the first and middle classes, the brain was removed by an opening through the nasal fossae, and an incision was made on the left side of the abdomen, through which the intestines were withdrawn, and spices and more or less costly aromatics were introduced, after which the body was washed, spread over with gum and wrapped in bandages of linen.

The Egyptian nation was divided, from the earliest times, into six orders, as follows: the king and princes, soldiers, shepherds, laborers and lastly artisans. The order of the priesthood was most respected and the most powerful, it was the depot of the laws, science and religion. The sovereign, before taking the reins of government into his hands, was affiliated to the sacerdotal order and initiated into its mysteries. The care of the priests to conceal their doctrines is well known, and that they might do it more effectually and transmit them to their successors, they employed a peculiar language and mode of writing, termed hieroglyphical or sacred, which differed essentially from the common language of the people, and while the vulgar prostrated themselves before rude images, emblems of the attributes of the divinity, the learned classes recognized an invisible and eternal spirit, a supreme Governor of the universe. To the latter order the medical men of that remote period belonged.

Typhoid Fever Diet. E. W. Robinson (Virg. Med. Semi., Mo., April 9, 1909) summarizes the views of seventeen prominent clinicians: The majority advocate liquids, milk and eggs as the chief dietary. Milk should be discontinued in case of curds, tympany, etc.; but not until these symptoms arise and so long as the patient is doing well. It could, no doubt, be shown that almost any other of the generally advocated foods could cause a disagreement with the digestion. Even water is possibly taken to excess at times. There are but two guides in typhoid diet: to nourish the patient; and to respect the local conditions in the digestive tract. Give the patient a sensible nurse and an obtusely bent feeding tube; tell the nurse to give the patient anything that will easily be taken through it; if curds occur cut off milk, using in its stead whey with essence of pepsin; or give water only for a few days should tympany arise.

EYE SYMPTOMS DEPENDENT UPON DISEASES OF THE KIDNEY.*

BY JOHN HENRY OHLY, M.D.
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IT is not my object to go into a detailed discussion as to the relation between the eye and the kidney in diseased states of the latter organ, but simply to bring before you in a brief manner some of the most important changes in the optical apparatus occurring during nephritic lesions.

As many changes which occur within the eye can be observed from day to day, and much can be learned from these conditions regarding the state of other organs, you will pardon me if I devote a few minutes to the fundus conditions and their pathology.

The parts of the eye most prone to become diseased in kidney lesions are the retina and optic nerve.

Consequently diminished vision to the degree of blindness has been noticed in cases of nephritis for years past, and Bright (who studied these symptoms) as early as 1836, described several such cases, as as did Landouzy in 1849. Link and Virchow in 1855 first described the pathological findings; and Albert von Graefe was the first to describe the changes taking place in the living retina by means of the ophthalmoscope devised by Helmholtz about the same time (1851).

Retinal changes may and do occur in the various forms of nephritic diseases, however, are most common in the later stages of the various forms of chronic nephritis and especially so in the small contracted kidney following an interstitial nephritis; less often in the (chronic) large white or the amyloid kidney.

In the acute form of nephritis, due to the infectious diseases, scarlet fever, diphtheria, measles; retinitis does occur, often also in nephritis caused by intoxications of metalic or other poisons, as lead, arsenic, ichtherus, malaria, etc., even in the cases of the simple hyperaemic conditions of the kidney, as in pregnancy.

The percentage of retinal involvement in the kidney diseases varies much according to the observer, and ranges from five to twenty per cent. This form of retinitis has been called albuminuric retinitis, due to the fact that albumin is found, if not always, at least at times in the urine; and it presents, if not in all cases, at least in many, a most characteristic ophthalmoscopic picture from which alone a diagnosis of some kidney trouble could be determined with a fair degree of certainty.

Thus it not infrequently happens that the oculist first recognizes some cases in which the symptoms are not well pronounced. Such patients present themselves for glasses for the relief of headache or defective vision, and I myself have seen no less than half a dozen such cases within the past few months.

Many times marked changes have occurred in the eye before the vision becomes impaired, much depending if the macula lutea becomes affected; and then again disturbances of vision arise almost before any changes can be seen in the fundus. As for example, the seeing and dancing of bright and dark specks before the eyes when not due to some digestive disturbance. Such cases need the very best of care and a most careful examination as to the opththalmological changes which are the minutest; and a recognition in the earliest stages of any beginning kidney disease is certainly desirable.

These early cases may not show albumin in the urine until repeated careful tests have been made.

As stated, the first changes usually occur in the retina, but the optic nerve may be primarily affected and range from a slight hyperaemia to an optic neuritis, increasing in intensity and then involving the retina.

The earliest changes are vascular, in the blood and vessels of the retina; these become somewhat irregular in their calibre, slightly tortuous, causing a change in their light reflex, and in the posterior part of the eye, often fine pigmentary changes.

The picture of a typical case of albuminuric retinitis begins with a slight haziness and opacity of the normally transparent retina, first, generally near the macula lutea; the blood vessels become more tortuous and the veins well filled.

Near the posterior pole of the eye in the region of the macula lutea, small round yellow patches develop, (the apparent size of a pinhead) with small red thin linear hemorrhages which tend to take on an arrangement of radiating lines from a central point.

The optic disc becomes very hyperaemic, the physiological excavation becomes indistinct, the scleral ring blurred and its outline very hazy giving the picture of a neuritis.

When the above condition progresses the typical picture presents itself. Around the macular region are elongated thin plaques of a whitish yellowish exudative material, taking the place of the small white spots and minute hemorrhages; these radiate out into the retina quite close together, often as many as fifteen in number, much as rays radiate from any luminous body.

The vascular changes are more marked; the disc becomes more inflamed, swells, and is covered with an exudate of a similar whitish yellow appearance, in places covering and hiding the vessels from view, especially near their exit from the nerve.

As I do not wish to go into this matter in detail, shall only briefly refer to the pathology; it may be useful, as similar vascular changes are going on in the brain and probably in some organs where such changes have a more vital interest.

As before stated, retina and disc show the most marked changes. The haziness and opacity of the retina are due to an oedema and consequent swelling of the superficial layers, viz., the radiating fibres of the retina; these become sclerosed, and between them an oedematous albuminous fluid (also containing fibrin) is deposited.

The whitish plaques around the macula are due to fatty degeneration in the outer and inner granular layer, in which the fibres radiate toward the macula, and here in this particular place, which lies most remote from the capillaries of the retina and underlying choroid, the degeneration is most liable to occur.

The reddish hemorrhages are directly due to lesions of the arterial and capillary wall in the retina (similar changes also occur in the choroid) which are sclerotic and show hyaline changes, and some may form homogeneous yellowish white tubes (arteritis obliterous).

The changes in the disc are similar to those just described. After an inflammation of this kind subsides,

*Read before the Alumni Society of the Norwegian Hospital.

the retina and optic disc may return to somewhat their former appearance, if the changes wrought are not too great and long continued.

The star-shaped area of fatty degeneration may reabsorb the swelling, and much of the exudate about the disc disappear, leaving a disc whose outlines may be rather indistinct.

The more severe cases produce optic atrophy from the inflammation and marked arterial changes; this often leaves the eye practically blind; but the impairment in function of the eye is not always in relation to the severity of the inflammation; thus many apparent severe cases retain or regain a fair amount of sight.

Generally speaking, the prognosis as to sight is not bad; and even if it does not return at once it generally improves after several weeks. When the mamla itself becomes diseased the sight is always worse and the result is generally a more or less positive central defect of sight (scotoma).

The color sense is not affected as in some other forms of retinitis and neuritis.

As stated, permanent blindness is rare and due to secondary nerve atrophy. A transitory blindness may be due to an uraemic condition, of which we will speak later on.

A few words must be said about the *differential diagnosis,* a typical case can hardly be mistaken; but when there are only slight changes in the retina, and the optic nerve shows a neuritis, and the urine remains negative as to albumin, we may have a neuro-retinitis due to brain tumor or some other cause.

Persistent medullary nerve fibres might be mistaken at first glance for this condition.

Retinal changes similar to albuminuric retinitis can occur in diabetes, gout, chlorosis, meningitis, as also from unknown idiopathic causes.

Generally both eyes are affected in albuminuric retinitis, or one shortly after the other; this means often careful examinations as one eye may exhibit only the slightest changes.

The relation between the changes in the retina and kidney lesion has been explained in many ways, and it might be interesting to give you some of the more important views.

Traube believed the changes to be due to a hypertrophy of the cardiac muscle as seen in many kidney lesions, increasing vascular tension, causing the minute retinal hemorrhages, and thus the other pathological conditions.

However, there are cases where no hemorrhages are seen and certainly no true cardiac hypertrophy exists in acute nephritis and in pregnancy.

The French authorities, including Lemarche and Trosseau, claimed that it is primarily due to a diseased condition of the arterial system, in which the blood vessels degenerate and the resulting changes occur.

Weeks suggested dividing the causes into two classes, one in which the disease of the arteries, capillaries, and to some degree the veins is the primary condition. The other class, due to the pathological changes in the blood, changed by an acute nephritis, scarlet fever, pregnancy, etc.

Schmidt Rimpler believes all these cases due to a change in the blood (causing possibly a chronic anaemia, which acts upon the fine capillaries and also in the nerve fibres directly, as is probably also the case to a different degree in gout, syphilis and leucaemia.

Etiology—

If after repeated study of these cases the true etiology as to the relation of these conditions can be learned, then our attention can be directed with more and additional vigor to the prevention and relief of the conditions.

The prognosis of the cases of nephritis with albuminuric retinitis is bad; in the typical cases the patient seldom lives longer than two years and generally dies within the first year, possibly from cerebral hemorrhage.

Men are more prone to these conditions than are women, as nephritis is also more prevalent among males.

The treatment is "prima indicatio," the nephritis with the best-known methods, diet, tonics, diaphoresis and the like.

Care should be exercised in giving hot baths; these sometimes causing congestion of the internal organs; and the retinal hemorrhages are liable to be increased. Leeches (artificial) are often beneficial when applied to the outer canthus of the eye. Pilocarpine to diminish the intra ocular tension has been advised, but this increases accumulative effort. Patients should rest their eyes as much as possible and wear dark glasses to dim the irritative effect of the light.

Albuminuric Retinitis of Pregnancy.—

This is a very rare complication, one in three thousand, and may vary from one of the slightest degree to one of such severity that blindness results. The onset is gradual and occurs generally in the first pregnancy, and in the later months of some.

The patient complains of dim vision and the fundus shows retinal changes, which, however, are not characteristic. The diagnosis, everything considered, is not difficult.

The prognosis is generally good as to life; as to the restoration of vision, fair; as a certain quantity is generally retained. Patients who have been affected by this disease are liable to recurrent attacks, which may lead to total blindness.

It has been recommended by high authorities, when the vision becomes much impaired and the arterial changes well pronounced, to induce premature labor, as this seems to correct the intra-ocular changes. Such patients must be warned against becoming pregnant.

Uraemic Amblyopia.—

Compared to albuminuric retinitis, uraemic amblyopia is a rare condition, and generally presents itself without any apparent changes in the fundus.

It usually follows the acute kidney lesions; diphtheria, scarlet fever, etc., also in pregnancy, but may also suddenly develop in chronic nephritis in which a retinitis has or has not been present.

The first case of uraemic amblyopia was described by Wells in 1812, and since that time many hundred have been reported. The picture of an uraemic attack is not unfamiliar; headache, nausea, emesis, impairment of the special sense, convulsions, coma, suppression or diminution of urine, etc.

As a rule, not until the patient comes out of the coma is the blindness noted; it may be complete, with or without other eye affections as paralysis of certain eye muscles.

Blindness occurs in about one per cent. of uraemic cases, no matter what the cause of the attack; it occurs possibly more frequently during pregnancy.

This form of blindness is seldom complete at first, but becomes so in one or two days, so that the patients are not able to recognize even the brightest lights before the eyes; one is often more affected than the other; then in the course of a few days the vision gradually returns, and in the most favorable cases returns completely in four or five days.

Outwardly the eye is absolutely normal in appearance, except possibly a little oedema about the lids, and the pupils may be slightly dilated; these, however, generally react to light. In case they do not do so, the prognosis is less favorable.

When these conditions develop with changes in the fundus the prognosis must be changed, as optic atrophy often resulting in great loss of vision occurs.

The cause of these uraemic amblyopiae, with no lesion in the fundus, must be some circulatory disturbance in the brain, possibly some local oedema, or some toxic material in the blood acting directly upon the nerve centers and cortical centers. The oedema when present at times extends to the optic nerve, causing a choked disc without any inflammatory signs.

Treatment.—

Treatment is directed against the uraemic condition. Locally, leeches might be applied, and the eyes protected from the light.

Ocular Paralysis.—

Occurs in nephritic conditions and affects any of the external or internal eye muscles. These paralyses usually disappear in a short time, but are liable to recur. They are probably due to small hemorrhages in the nerve centers or in the course of the nerves supplying the affected muscle. The abducens (external rectus) is most generally affected, causing a convergent squint.

The treatment here is constitutional. For the correction of the diplopia (which is crossed) prisms are used, or one eye bandaged for the time being.

It is very difficult to judge the amount of importance of the nephritic condition in its effect upon the eye; when other structures of the organ, as the cornea, iris, ciliary body, or internal structures become diseased. No doubt in many of these cases vascular changes are produced in these organs, as is also a chronic anaemia which lowers the resistance to any inflammatory process that might develop; but to directly attribute these coexisting lesions in the eye to a nephritis is, in my mind, not proper.

These questions arise as to the etiology of cataract. This disease is one of advanced years, and in the aged we are more prone to have nephritic changes. The statistics show that of people suffering from senile cataract, about five per cent. have albumin in the urine; this is hardly a percentage high enough to attribute the cataract to the presence of albumin.

The nine last cataracts I have operated upon in no case was there any albumin in the urine; in some cases the urine contained sugar.

In almost all cases of cataract there is an arteriosclerotic condition, which I believe to be an important factor, causing an impaired amount of nutrition to the lens and consequently its degeneration.

In nephritic patients it is not an unusual occurrence to be unable to see objects close to the eye, as in working or reading, even with their ordinary glasses for reading; this is due to paralysis of accommodation. This condition can be corrected by proper glasses.

An oedema about the lids is not uncommon in nephritis, co-existing with oedema in other parts of the body, and in many cases a forerunner of the oedema which develops in other parts of the body. The lower lid is generally affected, due to the very loose arrangement of the subcutaneous tissue.

Thus we have seen that many lesions of the eye are dependent upon the diseases of the kidney, and there are many more affections of that organ which are due to other constitutional conditions, especially so in diseases of the nervous system.

Bearing this fact in mind, it seems to me most essential, yes, absolutely necessary, that a successful oculist must not give up the search until he has found the cause for his eye complication, and cause treatment to be instituted against the primary cause.

Unfortunately there are cases in which no apparent cause can be found, and these we must class under that dark heading of idiopathic diseases of the eye; however, this same statement applies to all branches of medicine, and only by persistent effort can we ever hope to gradually diminish this great class of diseases.

22 Schermerhorn St., Brooklyn, N. Y.

THE TREATMENT OF TIC DOULOUREUX.

BY WILLIAM BENHAM SNOW, M.D., NEW YORK CITY.

THE origin of the conditions found in tic douloureux are entirely of an inflammatory nature, associated with the ordinary conditions present with neuritis. The inflammatory process is present either in the ganglion or the bony canal from which the nerve emerges, as will be noted in the varying conditions present in different cases.

When affecting the inferior dental nerve, the lesion will be found either at the entrance of the bone or at the emergence of the nerve anteriorly. While in cases involving the superior and other branches of the trifacial, the lesion is apt to be in the ganglion.

Indications: The indication in all cases is the relief of local congestion before hyperplasia or organized infiltration has resulted in a chronic condition of pressure which dooms the victim to a life of suffering.

Prognosis: The prognosis in the treatment of early cases by the method to be described has been uniformly good within one year's duration, but not generally so successful in the more chronic cases of tic douloureux.

Treatment: The treatment of inflammation anywhere must look first to the removal of the local induration or stasis which is always the cause of pain in inflammatory conditions. So true is this that the term neuralgia, as referred to pain, universally presupposes pressure—the pressure of infiltrating induration or organized hyperplasia.

An inflammatory process taken in the stage of infiltrating stasis, before the exudation has become organized is promptly curable by the means employed in these cases of facial neuralgia or peripheral neuritis. It has been accessible in all early cases coming under the writer's observation.

The method employed in the following case will illustrate the modus operandi employed in the treatment of tic douloureux.

Mrs. S., referred to me by Dr. Herman Grad, had been suffering for ten days with an acute facial neuralgia. The pain had become so intense that during the

five days preceding the first treatment, the patient had not been able to sleep day or night and was confined to her bed. The physicians in consultation had not been willing to give her relief with morphine, feeling that it was the beginning of a long process and that they must if possible eliminate the opiate.

When the patient was brought for treatment, a piece of pliable metal was moulded to her face covering all the points of distribution of the trifacial nerve. With the patient seated in an arm chair and with the elbow resting upon the arm of the chair, with her hand over the metal, retaining the electrode in position, the wave current from a static Holtz machine was administered in the regular way. The spark gap which the patient could bear at first was about one-quarter inch, this was gradually increased during the 20 minutes that the current was administered up to one-half inch. When the treatment was discontinued the patient was absolutely free from pain. Following this an administration of ten or fifteen minutes of the static brush discharge over the painful area rendered the surface hyperaemic.

The following morning she returned and reported having had five hours of actual relief from pain, followed by a slight recurrence, but not nearly so severe as previously. The treatment was administered in this manner every twelve hours for the next three days, and then once daily. When after ten days' treatment in this manner the patient had had no relapse of pain for three days, she was discharged. This case was treated seven years ago, and there has been no relapse.

Seven cases of this character have been since treated in the same manner and with uniformly the same result. Those coming under observation earlier require fewer treatments to complete the cure, and the cases of longer duration usually require a somewhat longer course of treatment.

Three other cases of long duration have come under observation: one of six months' and two others of more than a year's duration. One of these involving the inferior maxillary nerve, of which a resection had been once made, followed by a relief for several months, but again relapsing and coming under the writer's observation. In seventeen days this case was cured. During the last five days of treatment there had been no relapse of pain.

A case of six months' duration, the typical "convulsive tic," in the wife of a physician, was cured more than a year ago by this treatment; there has been no relapse.

The *modus operandi* of this method depends upon a principle of treatment which is universally successful in all accessible inflammations of a non-infectious character, and depends upon the removal of local stasis or induration. The application of an electric current of high voltage, particularly the static current, capable of producing contraction of the involved tissues, when continued for a sufficient period of time is capable of producing a drainage or expulsion of the fluid elements of infiltration, resulting in the re-establishment of normal circulation with complete restitution of the tissues to normal.

In chronic conditions where there has been an accumulation of fibrin and round cells in the involved tissues, a long course of treatment will be necessary to effectually eliminate these products of inflammation; but it will be successfully accomplished if persisted in, except in cases where the exudation has become organized or hyperplastic.

In all cases of neuritis, including sciatica and brachial neuritis, treatment instituted in the same manner, directed always to the site of the lesion without reference to the referred pains along the course of the nerve, is uniformly successful in the hands of those who are familiar with the principles involved and employ the treatment with requisite frequency and persistence.

That a principle so far reaching in its scope of application and indication should not be generally grasped and appreciated by the medical profession is a source of regret.

329 W. 57th Street, New York.

THE CARE OF THE BREASTS DURING THE PUERPERIUM.*

BY ROSS MC PHERSON, M.D., NEW YORK CITY.
Attending Surgeon to the Society of The Lying-In Hospital, New York City.

WITH too many physicians it is unfortunately a habit to regard their obstetrical work concluded with the delivery of the placenta, and to leave their cases thereafter in the care of the nurse and Providence. If Providence is kind, and the nurse well trained and conscientious, this is perhaps not so much to be regretted as it might at first thought seem, as the patient is at least saved from meddlesome interference.

While I am a firm advocate of the "let well enough alone" policy, and believe in refraining from interfering unless we have a marked indication, when we come to the care of the woman's breasts during the time that the lactation function first starts, there are several things toward which our attention ought to be turned, both for the mother and the child. It is to impress this on your minds that I am reading this paper this evening.

Recalling for a moment, in a very general way, the anatomy of the breasts, you will remember that they are globular shaped masses of gland tissue, situated on either side of the sternum, running from about the second to the seventh rib, and are of the type known as a compound racemose gland. They are covered with an elastic skin, capable of considerable distension, underneath which is a layer of fat, which is directly over the gland substance itself. At about the center is a mass of erectile tissue called the nipple, containing the lactiferous ducts, and surrounded at the base by a pigmented area called the areola, in which are the follicles of Montgomery. The lactiferous ducts, some fifteen or twenty in number, connect by ramifications with the lobules of the gland structure, and serve as the direct outlet of milk from the breast. During the nulliparous state the breasts are quiescent, but with the beginning of pregnancy, they commence to swell, grow painful, the areolæ to darken, the follicles of Montgomery to increase in number and size, and a fluid known as colostrum to be secreted.

The breasts gradually go on increasing, until at the time of delivery they may be two or three times their normal size. About the third day after delivery, the true milk makes its appearance, and the patient's troubles begin, unless skilfully and carefully handled.

The common symptoms with which the milk secre-

*Read before the Tri-Professional Medical Society, March, 1909.

tion is ushered in, are a slight rise of temperature, usually *without* an accompanying rise in the pulse rate, and tender, swollen breasts, which are more or less "lumpy," if I may use the word, to the touch. Unless vigorously and efficiently treated, this passes on to the state known as "caked breasts," which are nothing more nor less than glands which are so swollen with milk, as to cut off the return flow of blood, especially if they are not supported from falling down at the sides. The condition may be one of fearful pain, and I am sure that there are many of you who have seen patients screaming with agony from this cause alone. We have at this time essentially a hyperaemia of the breast plus the increased secretion.

Coming now to the treatment, I have divided it into four classes:

(a) Prophylactic.
(b) Restrictive.
(c) Eliminative.
(d) Local.

Taking these up in their order, *prophylaxis* consists in applying a tight breast binder of the sort shown here, to the patient, as soon as she is delivered, and of having the child nurse every three hours until the milk secretion is established. By following out this method we have many fewer cases to which we can apply the other treatments.

If the prophylaxis has not accomplished satisfactory results, the next steps are the *restrictive* ones, which consist in withholding from the patient all forms of fluid, such as coffee, tea, milk, cocoa, soup, etc., with the exception of the least amount of water with which she can possibly get along. In conjunction with this it is my custom to introduce *eliminative* measures.

The only practicable means of elimination which we have is by way of the bowels, and for this purpose, I am in the habit of employing a fifty per cent. solution of Rochelle salts, two drams every half hour, or every hour, until the bowels move freely. Occasionally we run across a patient who dislikes the Rochelle salts to a marked degree, and we can then substitute one of the other salines, such as Hunyadi water, citrate of magnesia, etc. The Rochelle seems to have a selective action on the breast at this time, and acts more quickly than do the others.

Accompanying the restriction, and elimination of fluids, we also institute local measures, upon which I lay a great deal of stress, and while what I am about to say may seem radical and dogmatic, I will ask you to kindly remember that I do not voice these opinions, except after a large personal experience with this class of cases.

The local measures consist of the application of heat, cold, and massage. After an extensive use of cold applications, I have given them up entirely, and limit the external treatment to the use of hot stupes and massage, in those cases where the latter seems suitable. The use of cold never seemed logical to me, and any advantage which it possesses is so small as not to compare with the results obtained with the slightly more inconvenient stupe. About the only merit which an ice bag possesses over the hot stupe is that it is less bothersome to apply, and as I do not believe in labor saving devices unless efficient, this feature does not strongly appeal to me. There is an old saying, that "where cold will do good, heat will do more good." This is nowhere truer than in cases of caked breasts, and I have no hesitancy in saying that where physicians have used heat in their treatment of this condition, and have had poor success, it was because they have not applied the heat properly.

To do this requires the following material, and I wish to state that while many things can be equally well done in different ways, stuping breasts is not one of them, and to get the best results it must be done as follows:

1. Cover the breasts with vaseline or cold cream (thick) in order that a higher degree of heat may be applied without burning the skin.
2. Have a large basin of boiling water.
3. Have four pieces of flannel about two feet square.
4. Have a stupe wringer. (If the water is so cool that the flannel can be wrung out by hand, it is too cool for use. Warm damp rags are not stupes.)

Having covered the breast with vaseline or cold cream thickly as already mentioned, wring out in the stupe wringer one piece of flannel and apply it loosely to the breast. Cover it with a piece of dry flannel and then apply another piece wrung out of the hot water to the other breast, again covering it. This is kept up until the breast becomes soft, red and painless with the milk flowing freely from the nipple. During this time the nipples are covered with sterile gauze and not handled.

Having finished with our stupe, if the breast still remains a trifle "lumpy," it is occasionally permissible to use massage. We must remember, however, that massage is one of the most useful means of promoting the secretion of milk, which we do not want at this time, and also that the breast is very tender, sensitive, and more liable to the invasion of micro-organisms during this period, so that the less handling that we do the better.

The binder is now applied, and the patient not disturbed until the next treatment, which should come in four hours. Usually three or four sets of stupes carried out in the way indicated are sufficient to relieve the patient completely, and the relief from pain is apparent at the end of the first application.

In passing, I will speak of the breast pump only to condemn its use. The fallacy of using a breast pump in these cases is, of course, apparent to you all, and I will not dwell upon it.

Such, then, are the things which we may hope to accomplish in a condition, which although common, and one which will usually in a few days of itself pass away is frequently a trying one, and one where, if we are conscientious, we can earn more gratitude from our patients, and cause more satisfaction to ourselves, than almost any method of controlling pain that I know. Its advantage lies in its certainty, as we can assure the woman of complete relief in a very short time, and of almost instant relief from the excruciating pain.

There are many other interesting features regarding the care of the breasts in the puerperium, such as fissured nipples, threatened and inevitable breast abscess, with remarks on the Bier treatment by means of hyperaemia, the methods of increasing an insufficient milk supply, drying up the breasts, etc., but I will spare you further details on a subject which may not interest you to the extent that it does me.

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THE PRINCIPLE OF PRIVILEGED COMMUNICATIONS.

HOW far should it render the physician an accomplice to a crime or to a danger to society?

Recent medical literature has contained several letters from physicians alluding to cases of venereal disease in servants who, after having the nature of their disease explained, have refused to leave their positions, though in one instance the girl, who had both gonorrhoea and syphilis in virulent forms, was charged with the care of four young children. In each instance, the attendant, though feeling himself bound to secrecy, protests against the danger of infecting innocent persons as well as against the humiliation of being himself virtually an accomplice.

Personally, we can see no greater reason for allowing an individual who has acquired a contagious disease of considerable severity, by immoral conduct, to become a menace to society, than one who has acquired a contagious disease of comparatively mild degree through chance exposure. Professional secrecy does not compel a physician to allow a patient with measles to infect other persons through wilful and selfish disregard for quarantine regulations and we fail to see why a patient with gonorrhoea or syphilis has any greater rights. Obviously, if, after an explanation of the danger, the venereal patient consents to pursue a course which will practically avoid danger to the community, divulgence of the nature of the disease would be a gross infringement of the rights of the patient. In many countries and some of our states, the people undertake to protect from danger of venereal infection, the man who visits a house of prostitution for immoral purposes. Shall innocent children have less protection?

Under present conditions, we are inclined to think that when a physician has explained the danger of infecting persons with a venereal disease and when the patient refuses to guide himself or herself accordingly, the physician has a perfect right to report the case to the local board of health for action.

A similar problem arises in regard to tuberculosis, somewhat simplified by the absence of the moral and social obloquy which are attached to the venereal patient, and, recently, in some States, by the enactment of laws requiring that the disease be reported.

The same general conflict between duty to the patient and to the community, arises in the case of men charged with heavy responsibilities and having disease or defects which either incapacitate or are likely suddenly to incapacitate them for duty. The responsibility may me one of morals, business, or of life and limb; the incapacity may be constant and partial, recurrent or merely potential. As to the nature of the responsibility we may suppose the case of a clergyman or teacher manifesting the erotic tendencies of incipient mental decay; a lawyer or broker with incipient general paresis involving delusions of grandeur along business lines or with any form of physical lesion which is liable to cause death or serious incapacity during the conduct of a legal case or a delicate investment; while responsibility as to life and limb is involved in nearly all branches of railroad, steamboat, mining and similar occupations.

As an example of constant and partial disability, may be mentioned a defect of vision or hearing on the part of one engaged in an occupation in which close attention to signals of various kinds is necessary for the safety of travelers. Epilepsy, syncope, certain forms of alcohol and drug habit, may be cited as examples of recurrent incapacity. Potential incapacity exists in a great variety of diseases liable to cause sudden death without obvious warning.

The decision of the physician is peculiarly hard when his own interests or those of his family, personal friends or patients, are involved. For instance, a few years ago, a physician discharged his chauffeur because the latter had a form of heart disease which was likely to cause his death at any time, with consequefit danger of death to his employer and associates, not to mention the pecuniary loss of the car. Longer ago, an eminent English surgeon forbade his wife to continue her relations with a female relative whose physical condition indicated lax moral habits. In both these instances the medical men were successfully sued for damages.

Under existing circumstances, it is difficult to lay down a general rule for action. Often, fortunately, the danger involved in keeping a professional confidence is very slight. In other cases, the issue can be dodged by tactfulness: for instance, the discontinuance of an acquaintance rendered undesirable by social conditions re-

vealed by professional knowledge, as in the case cited or that of a prospective son-in-law with a gonorrhoeic or syphilitis taint.

But, with all allowances, the general issue is a serious problem which requires attention both by the medical and the legal professions. At the risk of anticipating the formal consideration of the problem, we would point out the growing popular sentiment that the community has a paramount right to protect its own interests. The established sanctuaries from which no criminal, however guilty or dangerous, might be dragged even by officers of the law, long ago disappeared. Very recently the right of two parties to make a contract, has been invaded by laws regulating trusts, common carriers, etc., while the principle of "caveat emptor" has been attacked with tremendous benefit to the people, by the pure food law. The principle of privileged communications as affecting our profession has already been greatly modified in respect to certain contagious diseases. It is but a step to extend the same exception to other infections. A safe and sane principle of further curtailment should in our opinion recognize the essential difference between attempting to punish a crime already committed and to avert a threatened disaster to innocent persons.

THE SIGEL CASE.

ONCE more a mysterious disappearance has been cleared up by the discovery of decomposing human remains in a trunk. Horror at the crime of murder and sympathy for the bereaved family is felt all the more strongly because, though of comparatively recent arrival, this family had done much for the country of its adoption. But, in all the reports and comments on the case, it is significant that the emphasis has been laid, not on the crime of murder, but on the crime against society which the circumstances of the murder imply.

Had the murder been the work of an ordinary robber, committed at the home of the victim, or did the circumstances point to an assault by a stranger, on a woman who had unwisely ventured into a dangerous quarter of the city, the lessons to be learned would be merely those of precaution by the individual and the community, to render deeds of violence less easy and more certain of punishment.

The picture of a girl of twenty, of good social standing, apparently engaged to a white man and in love with two Chinamen, is not edifying to our youth. Leaving out of consideration the race question, and the terrible consequences of the underlying social fault, the picture is not so rare as it ought to be. The promiscuity with which girls bestow their minor caresses, at least; the readiness with which they enter into romantic friendships; the lightness with which they regard an engagement of marriage; the duplicity which they manifest in regard to their fiances, are the root of what so many superficial sociologists term the divorce evil and which they are endeavoring to treat by propping up and preventing the removal of a rotten branch. We are not so pessimistic as to say that this picture typifies modern society, but it is altogether too common.

Miscegeneration (often contracted into miscegenation) is abhorrent to the great majority of mankind, at least in cases in which the racial difference is great. In many primitive and even early semi-civilized or quite advanced peoples, marriage or even sexual acquaintance with a foreigner, has been considered as a form of incest, occasionally when incest in the modern sense was allowable. In our own country, the Jews are the only ones who manifest a strong and general abhorrence of intermarriage with another Caucasian stock, although to a considerable degree, religious and political prejudice, pride of family and of race in a very narrow sense, have operated along with natural effects of environment, to prevent any great admixture of the colonial and the various recent European stocks. Recent study has thrown considerable doubt on the existence of intrinsic physical and mental weakness of mulattoes and other cross breeds between members of the five great races and it is sub judice whether the prejudice against miscegeneration across these racial lines has anything stronger than a sentimental backing. On the other hand, it is equally doubtful whether the popular American sentiment in favor of mingling Aryan strains and against inbreeding—not too narrowly confined—is justified by the superior physique or mental qualities of human mongrels.

On the whole, we are inclined to believe that such a case as the present should be freed, as nearly as possible, from the abhorrence of race mixture. In particular, we would urge against the unreasoning play of race prejudice against Mongolians and would remind our philanthropists that many of the Chinamen more or less connected with the present case have shown a commendable spirit of assistance to the law and have expressed what seems to be a sincere sympathy for the family and regard the whole miserable affair quite as do other right-minded persons. Whether or not we welcome Asiatics and members of other dissimilar races, once here, the law exists quite as much to protect as to punish them and the police authorities should take particular pains to avoid the deeds of violence or even petty persecution which the crime of an individual is likely to bring upon innocent members of his race.

At the same time, the intimate personal acquaintance between persons of opposite sex, due to philanthropic

and religious sentiment, is a matter that we have always viewed with alarm. For some reason, it would seem that the assignment of one teacher, and usually a woman, to one male pupil, has been especially practiced in the case of the Chinese. In most instances, race pride and prejudice are a sufficient safeguard, but as in regard to nearly every problem in sexual psychology, there is apt to be either a phobia or a philia. The present case is by no means the first one to illustrate the social danger of throwing together men and women whose mating is undesirable, and who are under the exaltation of sentimental and religious ideas. Such exaltation, in general, is dangerously prone to pass over into erotism. In fairness to the Chinese, however, it should be said that comparatively few of them have taken advantage of the peculiar temptation which good people have put in their way. Indeed, so far as we can judge, the abuse of similar confidence has been most frequent in the case of the Christian European, whether the race confided to his care was brown, red, yellow or black, and whether in the present or preceeding centuries.

According to the press reports, the father of the present victim to injudicious philanthropy, anticipated and endeavored to prevent the disaster. On several occasions in the past, we have been shocked at the lack of judgment of parents, clergymen and religious and social reformers, in allowing young girls to act as ministrants to that class of society which needs our sympathy and care but which, at the same time, must be regarded with apprehension.

THE HYGIENIC ADVANTAGES OF MARRIAGE.

IN our June number we noticed the book translated from the German on *Marriage and Disease;** this contains, besides much else that is important and valuable, a contribution by Prof. M. Gruber, of Munich, on a vital subject which has recently, and is now being, much discussed. Gruber believes that monogamous permanent marriage, which appears to be a most natural consequence of the numerical proportion of the sexes, is morally as well as hygenically the best systems for the gratification of the sexual desire. That marriage is by far the best institution for the woman and the offspring; that its concomitants, the home and the family life, are the most immeasurable of human blessings, no one instinct with normal human sentiments will for a moment question. What is its effect upon the male?

We shall not here consider (it is beneath contempt) that joke about married men really not living longer than single men—that it only seems longer; but shall agree with Gruber's statistical findings that marriage is, like all our modern social and civilized institutions, an arrangement of the highest benefit to the health of the married persons themselves—but especially so for the male.

Gruber points out the importance of our having a clear idea wherein the favorable influence of marriage lies. It has been attempted to prove by statistics that sexual intercourse is a healthful necessity. But not only does this view rest on a foundation far too ingenuous for modern conditions—namely, that *all* single men are as a matter of course continent; it is inadmissable because there is more than one factor contributing to produce a lower mortality among married persons than among those living single. Men among the very poor would have their wives believe that sexual intercourse is of absolute necessity to the health of the man. Yes, and not only poor and ignorant men; but some intellectual, who should know better. A humane and enlightened clergyman recently stigmatized an old practice, based on theological injunction, of procreating large families. Well enough, indeed, for the fathers; but several wives are successively killed off in the process.

Science cannot subscribe to such views. It is absurd to regard the seminal fluid as an injurious secretion which requires regular evacuation, like the urine. There is very little doubt that part of the semen is not only reabsorbed during sexual abstemiousness; but that this reabsorption seems to have even a beneficial effect on the constitution, if we may judge by the experiences of athletes, sportsmen, scholars, and artists, who feel most virile and fit for great works when refraining entirely from sexual intercourse. The development of later sexual characters, physical and psychic, is doubtless also due to the reabsorption of the secretion from the seminal glands. That this reabsorption acts favorably is shown by comparing normal with castrated individuals. There thus appears to be no question that most normal men can, no less than women, permanently renounce sexual intercourse or the gratification of the sexual desire altogether without suffering any injury. Further conclusions may be drawn from our domestic animals; stallions, mares, male and female dogs remain healthy, though they be not allowed copulation.

This question of the injuriousness of the utmost importance; we who are in practice are constantly being consulted concerning it, especially by patients who are either permanently or for a time obliged to forego the idea of marriage, and because during married life also, long periods occur in which marital intercourse is impossible or not permissible. The non-connubial intercourse indulged in under such circumstances as a means of combatting the alleged harmfulness of continence is not only unnecessary and most reprehensible, but fraught with the gravest dangers. One has but to think

* Paul B. Hoeber, New York.

of the enormous risk of veneral infection with which non-conjugal intercourse is associated, not to speak of its essential immorality.

It is not, indeed, the frequent gratification of the sexual desire to which we must attribute the remarkable, comparative longevity of married men; this is due rather to their more orderly and regulated mode of life, their (average) lesser abuse of alcohol, and the relative infrequency of venereal infection and of its consequences.

PLAYING TO WIN.

WE have from time to time taken the position that in college athletics "playing to win" is to be deprecated; that the essential aim and purpose of college athletics should be twofold: to develop the bodies of young men to the utmost that is normal; and *pari passu*, to develop sentiments of honor and manliness. The latter factor in ideal college athletics is much too often ignored. It is with gratification that we note, in these premises, the strong stand against the coaching of college teams taken by Dr. E. H. Nichols, himself a former Harvard athlete and the medical advisor of several Cambridge football teams. The doctor describes the present coaching system as "an outgrowth of the need, not of avoiding physical injuries, but of the necessity of winning." Winning is indeed a good thing; but sometimes winning may be achieved at a cost greater than the winning is worth. Dr. Nichols is opposed to both the professional and to the graduate coaches. He admits that the games would not be so good if the students were left to themselves; "but what of it?" he asks. "The attraction of the game lies in the fact that we are all partisans." He is not opposed to teachers of the technique of games for individuals; but he insists that the entire control of a team should not be given to outsiders. There is, it seems, little to choose between graduate and professional coaches. An unscrupulous graduate can do more harm because the undergraduates are more readily influenced by him. Dr. Nichols rather overlooks, it would seem, the question of pay for such coaching service; this is an important factor.

The *Evening Post* well observes that the best remedy for coaching evils would be to cut down the number of games with competing colleges; and to abolish the gate-money which makes possible high priced coaches and the other extravagancies of which Dr. Nichols complains. Nothing would so quickly decrease the great publicity—notoriety, indeed—given to successful athletes than to do away with the offensive hippodrome features of the inter-university contests. When undergraduates can make $40,000 or $50,000 by a single game, it is but natural they should waste it upon "rubbers," trainers, coaches, medical attendance, automobiles and much other lavishness that makes the head of those swim for those of us who were graduated a score of years ago. The teams expect to receive free of cost the means of living during the training season. If Harvard were to limit her football schedules to three inter-university contests, the artificial public interest in the team would rapidly decrease. And if, as in the Oxford-Cambridge games, the spectators should have to stand, the lay press would not so much find it worth while to devote pages to accounts of the game. Then sport would begin to fall into its proper place in the life of the university. As it is now, intellectual advancement and pre-eminence, which it is the normal province of the university to foster, is quite lost sight of in the all-obscuring influence of athletics; as it is now the parchment and the lamp should give place to the gladiator as effigies on the seals of our universities.

A CROWNING HONOR.

PRESIDENT HADLEY, of Yale, in recently addressing the American Therapeutic Society, in New Haven, made an eloquent plea for the graduation of really good physicians; his sentiments must have had weight in the sister university at Cambridge, for we now learn with gratification that one Charles William Eliot has been made a doctor of Medicine. We heartily wish this budding practitioner no end of success! Dr. Eliot, as we may with peculiar appropriateness address him, Harvard's ex-president and now its president emeritus, was indeed the central figure in the commencement exercises of June 30. The two highest honorary degrees which the university can give—those of doctor of medicine and doctor of laws—were both bestowed on him by his successor, President A. Lawrence Lowell. The giving of the LL.D. was generally expected; but there had been no hint abroad of the double honor.

In conferring the unusual degree President Lowell declared: "It has not been our custom to confer the degree of doctor of medicine honoris causa, but an exception is fitting in the case of one who, in the opinion of professors of medicine, has accomplished more for the progress of medical education in this country than any other living man. He found our medical school brick and left it marble." And the following memorable words were used: "Charles William Eliot, teacher, administrator, orator, prophet, forty years the leader and guide of Harvard and in the single minded elevation of his character a model to her sons; the father of the present American university, the brother of all teachers and the friend of every lover of his country."

WATER STORAGE.

DR. A. C. HOUSTON, Director of Water Examination, Metropolitan Water Board, London, has conducted investigations of much interest and importance to communities in general. It is now his belief that rain river water should be stored antecedent to filtration for thirty days for the reason that storage reduces the number of bacteria of all sorts and, if sufficiently prolonged, devitalizes the germs of water borne diseases (typhoid and cholera).

It has indeed for some years been known that the storage of water undisturbed has the effect to reduce the number of bacteria with which it may be infected; Dr. Houston has now furnished us the results of laboratory tests in proof of this: Eighteen separate portions of water were infected with from forty to eighty million typhoid bacilli, and bacterial counts were made every week until the typhoid germs had entirely disappeared. In one of the series of tests ten of the portions of water failed to show any bacteria at the end of three weeks, sixteen at the end of four weeks, and in five weeks' time the whole of the eighteen portions failed to show any signs of the deadly germ.

Obviously, these tests bear greatly upon the question of city water supplies; where it is possible to store the water in suitable reservoirs and maintain it undisturbed for a few weeks before draining off, the city using that water is assured an additional safeguard against typhoid or cholera.

Of course (and Dr. Houston insists upon this), undisturbed storage should not take the place of filtration, which latter has proved to be especially a safeguard against typhoid. Storage must be looked upon as an additional protection, not as excluding the necessity for sand-bed filters. The time and expense of purifying a city's water supply might be reduced by using special storage reservoirs in combination with filtration at an especially rapid rate; Dr. Houston would prefer a well-stored, rapidly filtered water to an unstored slowly filtered water. The *Scientific American* suggests that the difficulty of maintaining a sufficiently large quantity of water in an undisturbed condition for the necessary four or five weeks might be overcome by building such reservoirs in duplicate, the water being drawn off in one while the other was undergoing its period of rest; though the cost of such a plant would be heavy (especially in large cities) this would be offset by the shorter time required to purify the water in the filtration beds and the greater purity obtained by the two-fold treatment.

It is *a propos* here to revert to Hazen's Theorem,* which is to the effect that for every death from typhoid fever avoided by the purification of public water supplies, two or three deaths from other causes—tuberculosis, pneumonia, dysenteries and infantile diarrhœas. How the latter comes about it is hard to say; possibly it is by reason that the use of impure water depresses the organisms' vital resistance, and is thus a predisposing factor. We have here added weight to the counsel that our citizens should be furnished pure water by the authorities.

*The Medical Times, October, 1908.

Why Poverty Exists was discussed recently by Prof. Devine in a lecture on "Poverty and Maladjustment." The view is unproved and unfounded which rests upon the assumption that poverty is necessarily connected with some form of personal depravity or shortcoming. "The annals of the city's tenements speak more eloquently and more tragically than the traditional annals of the poor. The stories which the annals of the tenements tell are in the main of maladjustment, of adverse conditions over which the individual who suffers is unable to exercise effective control, which, nevertheless, are not beyond control. The children are left fatherless and motherless by the premature death of their parents from preventable disease. People come to old age disabled by overwork or by work under bad conditions, having had little opportunity to make provision for age or to bring up their children to a position in which they can care for their parents. Much of blindness is due to preventable causes; much of the feeble-mindedness to lack of custodial care of feeble-minded and epileptic men and women. Some of the accidents are due to unguarded machinery, and much of illness to unsanitary conditions of home and factory, and to a low standard of living imposed by a low rate of wages."

Delirium Tremens. T. W. Ransom (J. A. M. A., April 17, 1909) has studied five hundred hospital cases. Incipients respond readily to treatment with chloral, ergot, bromides and whiskey (the drugs are here given in the order of their value). Delirious patients are very resistant to treatment; in the cases studied by Ransom the sedative drugs increased the mortality; scopolamin increased the mortality 13 per cent. These unsatisfactory results with the sedative drugs are due to the large dosage of them. Small doses (15 to 30 grains of chloral, for instance) may be given with good results; but when large quantities are given the death rate increases with the amount of sedative administered. The only drug which Ransom found to reduce the mortality is ergot; by its use the death rate was decreased more than 20 per cent. When whiskey was given the mortality was increased 18 per cent. Whiskey seemed to have some decided value in incipient cases, lowering the percentage of patients becoming delirious by 20 per cent; but in the cases with delirium the mortality was by this means raised nearly 2 per cent. Stomachics were extensively used; but Ransom has not recorded their effect. Generally drugs are not of such value that other therapeusis can be neglected; this is especially true for the wildly delirious patients, for whom much more can be done by nursing than by drugs. Proper methods of restraint, frequent giving of liquids and the use of sedative baths are important measures. Failing heart action or passage from delirium to stupor and coma, requires cardiac stimulants hypodermatically.

BIBLIOGRAPHICAL

Bier's Hyperemic Treatment in Surgery, Medicine, and all the Specialties: A Manual of Its Practical Application. By Willy Meyer, M.D., Professor of Surgery at the New York Post-Graduate Medical School and Hospital; and Professor Dr. Victor Schmieden, Assistant to Professor Bier at Berlin University, Germany. Second Revised Edition. Octavo of 280 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1909. Cloth, $3.00 net.

The fact that a revised edition of this work should be required in ten months is sufficient evidence as to the esteem in which this treatment is held by the profession. The authors are justly proud of their effort, and our readers should feel under great obligations for their opportunity to possess such a treatise in English.

The book should be in the hands of every general practitioner, that he may be able to use intelligently this gentle but potent therapeutic agent.

The Principles of Pharmacy. By Henry V. Arny, Ph.G., Ph.D., Professor of Pharmacy at the Cleveland School of Pharmacy, Pharmacy Department of Western Reserve University. Octavo of 1,175 pages, with 246 illustrations, mostly original. Philadelphia and London: W. B. Saunders Company. 1909. Cloth, $5.00, net; half morocco, $6.50, net.

The intention of this work is to explain the pharmacopoeia from its pharmaceutical standpoint, so that the student may be able to learn what certain unfamiliar terms mean, without having to search the literature for them. It is not, however, a text-book in chemistry or botany, but there is furnished a list of complete and reliable text-books in the various sciences which go to make up pharmacy.

It is a splendid book for the student of drugs, and for reference it will be found of great service to the general practitioner. We commend the work without reserve.

International Clinics.—A quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles. Edited by W. T. Longcope, M.D. Vol. II. Nineteenth Series. 1909. Philadelphia and London. J. B. Lippincott Company. 1909.

The following are the titles of some of the articles of this valuable publication, which are fully abreast of the times: Immunization Against Typhoid Fever; Mineral Waters in the Treatment of Syphilis; Diagnosis and Treatment of Pneumonia in Children; Tuberculous Serofibrinous Pleurisy and its Treatment; Some Remarks on Hyperchlorhydria; Diabetes; Surgical Pneumothorax as a Treatment for Phthisis; The Treatment of Abscess in Hip Joint; The Diagnosis of Pelvic Disease in Women; Anorectal Fistula and its Treatment, and many other interesting papers. There are also numerous illustrations.

Rational Immunization in the Treatment of Pulmonary Tuberculosis and Other Diseases. By E. C. Hart, B.A., B.Sc., M.R.C.P. Large octavo, pp. 75. New York: William Wood & Company. 1909.

This little book embraces a paper read before the Royal Society of Medicine in March, 1909. Its scope can best be set forth by noting the subjects it treats: The relation of treatment by inoculation to other methods of treatment; a critical review of the present position of hateroinoculation; the unreliability of the tuberculo-opsonic index, as at present estimated; autoinoculation; spontaneous and artificial: its history, value and limitation; autolysis, autolytic toxaemia; anti-autolytic defence; the antitryptic index.

The text covers a vast amount of important scientific work, and should be read to be appreciated.

A Practical Treatise on Rectal Diseases, their Diagnosis and Treatment by Ambulant Methods.—By Jacob Dissinger Albright, M.D. With thirty-two plates, four of which are in colors, and thirty-nine illustrations throughout the text. Octavo, pp. 455. Published by the Author, 3228 North Broad street, Philadelphia.

This book is written from practical experience, upon broad lines, and without prejudice. The text is not confined to the rut, and is not a rehash. We know of no book on this subject which we can commend more highly to the general practitioner than this. The specialist will no doubt criticize it severely. Our readers should judge for themselves.

Tuberculosis a Preventable and Curable Disease; Modern Methods for the Solution of the Tuberculosis Problem.—By S. Adolphus Knopf, M. D., Professor of Phthisis-therapy at the New York Post-graduate Medical School and Hospital, etc. Octavo, pp. 304. Price, $2. New York: Moffat, Yard & Company. 1909.

This is a new, all-round book, intended for all readers who are interested in its subject. Its highly eminent author has given the subject most diligent study, and has brought together a vast amount of practical instruction for the physician as well as for the layman. The book should be commended, especially to lay readers, as a guide to the prevention as well as the cure of this dread disease.

Diseases of the Bones and Joints.—Clinical studies by Joel E. Goldthwait, M.D.; Charles F. Painter, M.D.; Robert B. Osgood, M.D. Octavo, pp. 700, and 290 original illustrations. Cloth. Price $6.00. Boston: D. C. Heath & Co. 1909.

This book, for the general practitioner, is not a work upon orthopaedics, nor upon surgery, but is a study of the many heretofore obscure problems of chronic joint disease, addressed to all who must care for the so-called "Rheumatoid" cases. As stated in the Preface, "It is to those practitioners of medicine, therefore, to whom sufferers from joint disease usually make their first appeal that these studies are offered."

The authors have had exceptional opportunity and this book is the result of years of experience and the comparative study of many cases. It marks a distinct and notable advance. It is a work new in character, much needed, and by authors thoroughly competent to write it. It is presented with no claim that the limit of progress has been reached, but as a work which marks the progress made to this time, and with a plea that by observation, consideration, and co-operation of all to whom these patients come, greater service may be possible. The illustrations, especially the excellent skiagraphs, have received the great care demanded. The appearance and character of the volume are consonant with its professional value.

CORRESPONDENCE

THE DANGER OF BEING UNCONVENTIONAL.

To the Editor of the MEDICAL TIMES:

A health officer of a small town has lately gotten into serious trouble with the United States postal authorities, from mailing a pamphlet expressing some rather original opinions on hygienic matters, to the laity. Along with a number of observations as to water supply, the value of fresh air and forests, to which no one can take exception, are presented arguments for limiting the size of families, and for practicing masturbation in order to avoid pregnancy, loss of virginity, venereal disease, etc.

Both of these ideas are decidedly unconventional, especially the latter. While this country is one of religious freedom, it is, at least, unconventional to speak of "that lie . . . about Onan being slain by the Lord because he spilled it on the ground" and to declare that "Masturbation never made a fool of any one but the superstitious lies about it have made depraved sexual fools of all Christians and Hebrews." Without desiring to seem unkind, but as a further indication of the author's lack of conventionality, it may be said that the literary construction of this pamphlet does not follow ordinary precedents. The "Suggestions" were approved by the local Board of Health and copyrighted by the author.

Whether as a private individual or an official the physician should always be chary of distributing literature to the laity. An article on an extra-medical subject or even an occasional copy of a medical article to some friend interested in the sociologic or scientific topic with which it deals, is allowable, but the general principle should be observed of avoiding even the appearance of advertising. Health officials obviously must occasionally distribute pamphlets containing information as to sanitary matters, and these must present necessary facts in a plain manner. Even such literature should be most carefully worded to avoid the possibile inference of coarseness by men and women who may be shocked by matters to which medical men have become accustomed. Officials should also avoid encroaching upon the field of the private medical adviser, except as may become absolutely necessary.

We are convinced of the good faith of the author, and we rather admire the boldness of one who dares announce his belief in unpopular ideas. One of our acquaintances, like the author of this pamphlet, an atheist, advocates abortions whenever indicated to save a girl's reputation or the comfort of a family, but he does so only before bodies of men competent to discuss such grave issues of medical sociology. Personally, from the atheistic standpoint, we fail to appreciate the moral status of abortion, suicide or any other issue that does not directly involve the rights of another person. That is to say, we do not believe there is any true morality without religion, but merely a code of expediency, or, at best, of a certain degree of altruism.

While according to everyone the right to any form of religious belief or disbelief, it must be recognized that one of the most stringent rules of conventionality is to avoid assailing anything so intimate and vital as a religious belief. One can forgive bad taste, violation of privacy and even outspoken criticism on the part of a fanatic who believes that he bears the responsibility of another man's soul, but there is no corresponding excuse for the man who wishes to tear down, who can not logically regard either himself or anyone else as more than an automatic complex of chemic and physical phenomena, and who still attacks prevailing religious opinion except in certain form where he has, so to speak, the right to the floor.

It is a difficult matter to speak without prejudice regarding differences of opinion as to matters which the great majority of human beings consider both immoral and degraded. The average individual can not, therefore, express himself calmly on such matters as masturbation and other practices, commonly grouped under the general headings of sexual perversion. It is difficult even to concede the general possibility that a minority or individual view may be right and the prevalent one wrong, or to say under what conditions we would grant freedom of speech on such matters. But, we believe that an official has no right to promulgate a doctrine that is not generally accepted, or, at least, supported by a respectable minority of advanced thinkers. Office is not conferred on a man under a democratic government as a privilege of inforcing individual and original opinions, but of representing, whether as legislator, executive or judge, the conservative opinion of the people.

A good many young men of our profession wreck their careers because of the natural impatience of youth with conservative views and what they regard as mere conventionalities. We have no sympathy for apathy and laziness masking as conservatism, a great deal of sympathy with the man who sincerely holds a minority opinion and earnestly works to convince the majority. But, with increasing experience, we have found that most of our own minority opinions have veered around to the majority. In a few instances, the minority has grown to be a majority. Excepting matters depending upon technical, scientific principles so that research and discovery may reveal fundamental errors of fact, we have rarely known a time-honored and practically unanimous opinion to change.

Even when a conventionality seems to be purely arbitrary, it is worth while to pause and ask whether a reversal of custom would be any less so. Too, often, disregard of conventionality produces results quite as disastrous as that of reversing the port and starboard lights of a ship or changing the accepted bell and whistle signals. The ethics and even the etiquette of social and professional life involve ways of doing things that are not, of themselves essential but which express to others kindness, dignity, sympathy, morality. The man who attempts to sweep aside even trivial customs, without well considered reason, too often puts himself in the position of the learner of a language who does not see why a certain combination of letters or sounds should have a given meaning and who, therefore, decides to introduce a new combination. He accomplished nothing beyond making himself misunderstood and confusing those whom he addresses.

CRITIC.

Gilt-Edged Families.—An exchange astutely observes: The accounts you are carrying of some of your gilt-edged families may be as good as a bank account; but the money is not bearing interest for you.

"YELLOW JACK IN CUBA AGAIN"; WHAT IS THE DISEASE? AND INCIDENTALLY A POINTER ON "APPENDICITIS."

"A rose by any other name," etc.

To the Editor of the MEDICAL TIMES:

That marvelous delineator of human character and motives, the great novelist, Balzac, in one of his tales refers to the super-scientific doctors who are famous for their nomenclature, and compares them to the marker at a billiard table who may, himself, have very little skill at the game. He related an experience of his own when sick in Paris; finding his condition getting steadily worse he dismissed his "regular" doctor and called in a hydrotherapist who fasted him for ten or twelve days and gave him the "water treatment," inside and out, so skilfully that he was soon convalescent and able to resume his writing. This was, I believe, in 1841, and we thus learn that 60-odd years ago there was at least one physician in France who knew when *not* to feed a sick man, as well as when to feed him! For aught I know, his may have been a case of pernicious malaria or malignant jaundice, such as would in Cuba or New Orleans be called yellow fever. Dr. Felix Oswald long ago declared that these so-called different diseases were actually identical; and it seems to me that it does not require the wisdom of a sage to comprehend the truth of this statement. In malignant jaundice we have the yellow skin, yellow eyes, temperature, etc., and in fact, all of the symptoms of true yellow fever, the same in case of a patient in the north in mid-winter as in one at the south in summer. The causes of every such attack are likewise the same, viz.; wrong and over-feeding, the free use of strong coffee, animal food in excess, over-clothing, lack of exercise, lack of fresh air in the living and sleeping-rooms, etc., etc. Under the influence of this sort of regimen he of the "bilious temperament," or diathesis, will in time develop the disease with the color and other symptoms all right, though more tardily in the north, or in severe cold weather, than in the south, or in hot weather in any climate. We are all aware of the fact that any epidemic of "yellow fever," say in Havana, is very speedily ended under the influence of a cold wave, although there will continue to be here and there a case of the disease in individuals that, as I would put it, are peculiarly predisposed to it from extraordinarily bad living habits. Other individuals will from practically the same causes develop typhoid fever, pneumonia, small-pox, diphtheria, or other filth-disease, and in any climate.

Under the title of "Why Quackery Succeeds," Dr. Eden, in the Lancet (Medical Record, Jan. 13, 1900), deplores the fact and declares it a reproach to the medical profession, that with all our boasted scientific progress the practice of the healing art, except in the domain of surgery, is making such scanty advancement. And even here we might pause to criticize the present tendency of the profession to rush in with the knife in cases demanding only skilful hydrotherapeutic and dietetic management. Sir Henry Burdett, a celebrated English surgeon, recently touring this country, addressing medical societies, said some very strong things against "the present craze for operations." "What we want," he declared, "in every country is a voice in the mouth of every great surgeon who, with the wisdom to be conservative, has the courage to protest against this ever growing tendency to put a knife into everybody on the smallest possible pretext." During the past twenty years most pelvic inflammations are diagnosed as appendicitis, and the blame laid upon a most useful and absolutely inoffensive organ, one whose function and position are such as to make it practically immune from disease, except as affected by inflammation of the colon, an inflammation which by continuity of tissues may, of course, and often does, extend to the appendix, as an inflammation of the calf of the leg may extend to the little toe. The intestinal tract is at all times, with most persons, a martyr to all manner of abuse from food and drink, and the appendix is its guardian angel, so to say, with its secretion of "a digestive fluid of great value which it pours into the caecum along with large amounts of mucus highly useful in lubricating the alimentary bolus, and at the same time repressing the development of injurious bacteria," to quote the language of Sir Wm. McEwen, the eminent professor of surgery of the University of Glasgow, who approves of the appendix and has set his face against appendectomy. Dr. McEwen calls attention to the universal pre-existence of indigestion in all cases of "appendicitis," and also to the fact that most persons who have lost the appendix are thenceforth subject to ill-conditioned bowels, in some cases diarrhea, but usually chronic constipation. In fact, these victims are more than ever subject to colitis, the very disease for which they were "sent to the block," so to say, as I have had abundant means of proving of late years.

The Medical Record just now says that yellow fever is again prevalent in Cuba, and censures the island authorities for its recurrence, saying that they have concealed the fact by claiming that the fever is pernicious malaria or malignant jaundice! It is the Record's article that moved me to write out my views on this subject and to suggest the true means of prevention of this form of "the yellow peril," namely, a diet suited to the climate and the season. So long as the residents, regular or transient, presume to feed themselves in Cuba and in summer on a diet such as only the toughest of our people can bear up under in winter at the north, so long will they be predisposed to the disease under consideration. To blame it on the mosquito, or any part of it, instead of on the swamps and filth which breed these little scavangers—for, beyond question, "mal-aria," meaning *bad air*, has an influence in the matter—is, to my mind, much like blaming the appendix for colitis, or, as it was formerly called, "inflammation of the bowels"!

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Coffee.—The first cup in Europe is said to have been drunk in Venice toward the end of the sixteenth century. The Venetian chronicler Morosini mentions (1585) the "cavée" drunk by the Turks and noted for its anti-soporific quality. In 1591 a Venetian doctor introduced the berry from Egypt, taught his countrymen how to crush and brew it; and the use of coffee soon became so general that Venice was full of coffee houses where much time was idled away drinking the aromatic beverage. Oddly enough, the patrons of these cafés did not pay for each cup of coffee they drank, but settled their bills at the year's end for all they had consumed in that time.

RETROSPECTIVE

Uses of the Bromides.—In this group are remarkable virtues. The Bromides quiet excitement, or spasm, not due to organic pain. Mental overactivities and nerve storms yield to the Bromides. Motor storms and exaggerated activities are thus quieted and quelled. But if neoplasm or trauma has produced the morbid condition the Bromides will not help us.

1. Bromides are valuable in epilepsy of the functional motor or idiopathic form. Hypochloridization is used in this method of treatment. The chlorid of sodium is allowed the patient for one or two weeks while taking the bromid. Then for a week no salt is allowed, and the bromid also is withdrawn. A mixture of strontii bromid, sodium and potassium bromid, and possibly ammonium bromid (C. P.) is often most successful. Potassium salts are classified as katabolic, and the sodium salts are often found stimulating. For idiopathic epilepsy, the potassium and strontii bromid offers an excellent combination, and this may be given, freely diluted, about half an hour after meals. Some writers suggest giving the bromid mixture before meals.

We may administer bromid combinations in water, or in water with the compound syrup of sarsaparilla, or some lemon syrup. The use of simple elixir and a flavoring is often agreeable.

By changing the vehicle we may encourage the patient to continue medical treatment, when the same monotonous dose would act to deter conscientious adherence to orders.

Order saline drinks to open the bowels, when the patient takes bromids over a length of time. Some authorities give no bromid every seventh day, and that day a mercurial and a saline is exhibited.

2. Potassium Bromid is a very happy addition to stimulant cough mixtures, acting better than the vegetable alkaloids recommended, such as morphin, or heroin. Paregoric sometimes is added, and in the well-known Brown mixture is a constituent of some value. But to Ammonium Chlorid, and a very small amount of Potassium Bromid, some glycerin, and syrup of white pine, or wild cherry, as desired, filling up the bottle with water, and this will accomplish things in the treatment of cough such as complicates colds, acute bronchitis, grippe, and fevers.

3. A Bromid is an efficient hypnotic in cases of mental excitement, and when the Ideenflucht forbids rest. Give the salt in plenty of water. Look into the condition of vasomotor tension, and be sure to reduce any vasomotor spasm. If any seat of pain be discoverable, employ hot compresses, and give Dover Powder or in acute pain such as charactrizes cholelithiasis or renal stone, a dose of morphin is justified. Then the bromid given every hour in massive dose will operate to the satisfaction of patient and doctor.

4. In exophthalmic goitre the use of bromids and hypochloridization will bring the patient to a state in which operation may be considered. Stewart does not fancy prolonged lymph treatment. He finds that operation is fairly successful and is safe, which seems one of the important points from the patient's side of the affair.

5. In disease of the sympathetic system the use of bromid mixtures is justifiable. Hirst used to tell the class that he ordered the bromides for any "queer" symptoms if there was no pain, and some salol or the salicylates if pain was present!

6. Some doses of bromid may be added to medicine when a depressomotor effect is desired. This will be helpful if the cases show a nervous tendency. In acute laryngitis, or in early bronchitis when the citrate of potassium is given a small quantity of Potassium Bromid will afford much comfort.

7. Very minute doses of a bromid given with the elixir of calsaya will act as a tonic and nervine.

We have to select cases of a nervous and neurotic type. These are complaining of moments of depression and mental loss of grip. They are people of some varying intellectual force. People who tire readily. They are often sufferers from gastroptosis, enteroptosis, movable kidney, uterine displacement, or prolapse. Some have symptoms of eye strain. Some have peculiar ear troubles. Anemia may be secondary to malaria, or some acute exanthem or fever.

Calisaya seems to favor leucocytosis, and increases the resistance of the tissues to toxins, at least, such is a large clinical experience. The addition of a bromid to the calisaya preparation may be aided if we put also a good essence of pepsin into the mixture. But some of these neurotic people react very badly to the essence of pepsin on account of the sherry, and the alcohol. I believe that the peculiar sensibility to alcohol which is shown by many such cases is to be laid at the door of syphilis, epilepsy, or an earlier abuse of alcohol or to some scrofulous or tuberculous taint. All of these possibilities the clinician will consider. The point at issue is the need of a good, and pleasant but non-alcoholic preparation of the pepsin, for these neurotic patients.

8. Bromids combined with scopalamin may be used in Parkinson's Disease. The peculiar changes in the muscles themselves in this disease (Paralysis Agitans) led the writer to treat the pancreas. Some Trypsin and Amylopsin injections given produced the curious effect of delaying the onset of the tremor. The patient had about an hour's rest each morning, after he awoke, before the tremor set in. The injections increased this interval. The patient was put on a diabetic diet, which seems to increase the action of the treatment, and allows the trypsin and amylopsin to be given in larger doses and more frequently.

But the Paralysis Agitans did not disappear. Further cases and study may lead to results.

9. In Chorea, in spite of the indication for lessened motor influence, our experience does not call for the bromids. Liquor Potassii Arsenitis remains the chief remedy. However, this preparation is excellently followed by well diluted doses of Phosphoric Acid. The writer has seen chorea in cases of adolescent boys, complicated by sexual abuses of perhaps not a serious nature. But a state of extreme muscular instability ensued. The ocular muscles would twitch, so that the boy could not gaze straightforwardly at an object or person. Besides generalized choreiform movements intensified by attempts at muscular effort, the intellect seemed depressed and not at all what it should be at this awakening age. So much have such cases turned in this direction that the clinician would think of a possible development of Dementia Precox.

The administration of Liquor Potassi Arsenitis was followed by Liquor Ferri Peptonati cum Mangani.

After an alternate weekly administration of these remedies, a change to the Dilute Phosphoric Acid produces marked advancement in health with brightening of mental faculties. The use of bromid with Elixir of Calisayæ may serve as a good general tonic at this point, and to control the sexual function. But the quantity of bromid should be very small and at each dose not more than 5 or 10, or even 15, centigrams.

10. In cases of tetanus the doses of bromids given may be assisted by antispasmodics.

11. In meningitis bromids are given. It would be well to withdraw some of the cephalorrhachidian fluid for examination. And the tuberculin test, as done by Calmette and by Irimescu, is valuable if the presence of tuberculous infection is thought of. In applying this tuberculin reaction, Irimescu does not think the eye any more sure than the skin. He reports, however, no ill effects from either. The general reports from France, Bulgaria and America which have come to the notice of the compiler are favorable to the employment of the tuberculin test. Of the two sorts of tuberculin, that known as old tuberculin is perhaps preferable. All authorities unite in the safety of the procedure, while some are doubtful of its diagnostic importance.

Should tuberculous meningitis be diagnosed, the use of bromids takes on a purely symptomatic aspect in the management of the case. But bromids have a great advantage in being not toxic.

Some students report a condition of urinary difficulty after large doses of bromid. However, the dose would have to be very large. Transitory stoppage of the water has been noted after twelve to fifteen grams of potassium bromid. Has this been effected by direct influence upon the secreto-motor nerve filaments or by centric influence?

The practitioner must not forget the value of bromid combinations for headache. At the same time camphor monobromata does not cure the cause or causes of headache or sick stomach.

Hydrobromic Acid is a near relative of the bromides. It is a valuable astringent affecting digestion and the nervous centers related to the liver. In cases of neurasthenic torpor of the liver and pancreas we find this dilute acid does good.

Epilepsy, now and then, is well treated by 10 to 20 drop doses of dilute Hydrobromic Acid.

It may be ordered taken in plenty of water, through a glass tube, before meals. More cases are suited by its administration after meals. It may be given at once after eating. However, like the bromid mixtures, a half hour to one hour may well be suffered to elapse before the medicine is taken.

Effervescing or citric acid derivaties added to a preparation containing bromids may be very popular for colds, coughs, La Grippe and headache. The practitioner will agree that the causes of these illnesses are to be sought as soon as practicable.

Bromides are thought to brutalize any patient long subject to their influence. The theory that we learn through our motor apparatus is well supported, and if this be so, any depresso-motor may become intolerable.

However, the clinical study of cases enables us to vary our procedure and the sort of bromid given.

12. In Pertussis the bromides have some fame But modern writers turn from this older treatment to special remedies. Some recent article speaks of the iodid of silver (American Journal of Clinical Medicine). Experience shows that whooping-cough will give way to any drug if it is continued long enough, or employed at the close of the stadium of the ailment. Bromids do some good, at least in adjuvant positions.

The bromid should be a pure preparation and always well diluted. In most instances it is well to give a large enough dose, and not have to repeat it too often.

13. In the therapy of infants and children the use of bromid mixtures ought to be fresh in mind.

Instead of narcotics or dangerous combinations, the practitioner has found, if not always remembered, that a small dose of bromid given in solution, say about 3 to 5 centigrams in simple elixir, will quiet the restless patient. It may be well to give some citrate of potassium in conjunction, if any fever exists. Of course, the dose of strontii bromid may be increased with entire safety, but small doses accomplish much, and may be repeated as need arises.

14. Use bromids in any case of mental excitement where a safe remedy that can be pushed is indicated.

15. Ethyl Bromid, as well as Ethyl Chlorid, is useful to produce anesthesia. Some drawbacks and dangers have been reported.

Some Useful Therapeutic Notes.—The Ethical Preparations Committee of the Philadelphia Association of Retail Druggists has been issuing little pamphlets, from time to time, in which the useful and elegant formulas of the United States Pharmacopoeia, eighth edition, and the National Formulary, third edition, are set forth.

Under the head of Intestinal Astringents and Antiseptics our resources are considerable. Besides the astringent and antiseptic acids, such as benzoic, boric, gallic, salicylic and tannic acids, nitrate of silver, betanaphthol and the bismuth preparations, creosote, hemotoxylon and guaiacol, kino and krameria, there are important mixtures:

1. Liquor Antisepticus. This contains a two per cent. solution of boric acid; benzoic acid and thymol, each one per cent.; eucalyptol and oils of peppermint, gaultheria, thyme, and 25 per cent. of alcohol. This may be taken internally in doses of 4 c. .c or one fluidram.

2. Liquor Antisepticus Alkalinus. An aqueous solution with 25 per cent. glycerin containing potassium bicarbonate and sodium benzoate, each 3.2; sodium borate 0.8; oil gaultheria 0.04; thymol, eucalyptol and oil of peppermint, each 0.02 in 100 c. c., colored purplish red with persionis.

3. Parrish's Camphor Mixture, known as Mistura Camphoræ Tromatica, N. F.

℞ Sacchari	3.5
Tr. lavandulae comp.	25.0
Aquæ comphoræ q. s. ad	100.0

M. Dose: 8 c. c., or 2 fluidrams.

4. Sun Cholera Mixture:

℞ Tr. capsici	2.5
Tr. rhei	2.5
Spt. camphoræ	5.0
Spt. menthæ piperit	5.0
Tr. opii	5.0
Alcohol	5.0

M. Dose: 2 c. c., or 30 minims.

5. Squibb's Diarrhea Mixture:

Tr. capsici	2.5
Tr. opii	5.0
Spt. camphoræ	5.0
Chloroformi	2.0
Alcohol q. s. ad	25.0

M. Dose: 2 c. c., or 30 minims.

Besides these we have resorcinol, salicinum, thymol, oil of birch and oil of gaultheria, opium, powders of lead and opium, salol (now known as phenylis salicylas, the salicylic ester of phenol), quinine salicylate, sodium phenolsulphonate (or the sulphocarbolate of 1890), strontium and sodium salicylate, the tincture of the chloride of iron, and compound tincture of gambir (formerly known as catechu, 1890). Zinc phenolsulphonate closes the alphabetic list.

One pleasure in going over these compilations, besides refreshing memory, is the recognition of the changes of the new pharmacopoeia. It is not common to find the busy practitioner in his easy chair with copies of the old and new Pharmacopoeias, comparing their differences. If he had time for this he would not be the busy practitioner, and by the same token there would be no excuse for abstracts, as the originals are much more interesting.

The Treatment of Cerebro-Spinal Meningitis by Flexner's Serum.—The action of this serum (Dr. L. Emmett Holt, N. Y. State Jour., June, '09) is chiefly upon the meningococci, diminishing their viability and increasing their capacity for phagocytosis. By its effect upon the micro-organisms it arrests the inflammatory process. To accomplish this result the serum must be injected in considerable quantity; it must be brought directly into contact with these organisms, and in a certain degree of concentration. This enables one to understand why it is practically without effect when given subcutaneously or intravenously, also to appreciate the advantage of withdrawing by puncture as much cerebro-spinal fluid as possible before the injections are made, and finally, the necessity for full doses early before important lesions have occurred. In cases suspected to be cerebro-spinal meningitis, lumbar puncture should be made at the earliest possible moment. It is desirable to withdraw all the fluid that will come away readily, and after the spinal canal has been emptied, the serum, which has been previously warmed to the body temperature, is injected through the puncture needle without withdrawing the latter from the spinal canal. The injection should not be repeated unless the case is proven to be one of cerebro-spinal meningitis.

The initial dose for any case should not be less than 30 c. c.; in cases in which a larger amount of fluid can be removed, particularly in older patients, and in very severe cases, as much as 45 to 50 c.c. may be advantageously given. Instead of waiting to see whether improvement follows the first dose and giving the second dose after two or three days it has been found best to give a full daily dose for three or four days to make the destruction of the bacteria certain. The indications for repeating the dose are afforded not only by the symptoms, but by the changes which take place in the cerebro-spinal fluid. The daily dose should not be given until the fluid becomes absolutely clear. A further use of the serum, even though some temperature may still be present, is not always needed. One may wait and watch the symptoms.

Giemsa's Method of Staining the Treponema Pallidum.—Levaditi and Roché (Hospital) describe two methods:

Slow Method.—To secure good preparations it is essential that the smear be carefully made and well fixed before staining. The smear may be made either on a slide or on a cover glass. A small drop of the clear fluid which exudes after scraping the surface of a chancre should be placed on the slide and spread out in a thin and uniform layer. If there are any solid particles, these may be crushed between two cover-glasses, after moistening with a little normal saline solution. The best method of fixation is by alcohol. After drying the smear in the air the slides or cover-glasses are plunged into a beaker containing alcohol, covered up, and left for half an hour or longer. The stain is prepared by Grubler under the name "Giemsa's Solution for Romanowsky Staining." Its exact composition is as follows:

Azur ii—Eosin	3 gms.
Azur ii	.8 gms.
Glycerine (Merck) chemically pure, and Methylic alcohol aa	250 c. c.

Just before use, 15 drops of this are mixed with 10 c.c. of water in a Petri dish. Into this all preparations are put for several hours. They are then washed in water, dried on filter paper, and mounted in balsam.

Rapid Method.—The smears (as thin as possible) are made on the slide, not on a cover-glass. If the preparations have been made some little time simple drying in the air is sufficient to fix them, but fresh specimens should be fixed by passing the slide three times through the flame of a spirit lamp or of a half-turn-on Bunsen burner.

Ten drops of the Giemsa stain are put into a test-tube containing 10 c. c. of distilled water, taking care to avoid the slightest trace of acid in the water. To avoid the formation of precipitates the vessels used must be clean, and the Giemsa stain must be added to the water drop by drop, while the test tube is gently shaken. The dilution should be made just before use. The staining powers are intensified by the addition of 5 to 10 drops of a 1 in 1000 solution of carbonate of soda.

The slide is held in forceps, and a few drops of staining mixture are placed over the smear. It is then gently warmed over the spirit-lamp flame for a few seconds, until vapor arises, but short of boiling. The solution is then thrown off; a fresh lot is put on, warmed as before, and thrown off. A third lot is dropped on, and warmed gently for one to two minutes. The slide is then washed in water, dried on filter paper, and mounted in balsam.

The treponema is colored a reddish violet. The first method is recommended for the study of details of structure of the parasite and its relationship with the cellular elements, the latter for diagnosis.

Prandial Diarrhoea.—Linossier (Archiv. des Mal de l' appariel Digestif, Jan. 3, '08) designates prandial diarrhoea as a condition in which the diarrhoea is directly related to and occurs in immediate connection with the ingestion of food. The disease attacks principally individuals of a bilious and at the same time nervous constitution. The diarrhoea appears either during or immediately after meals, most frequently after lunch, the attacks being less apt to occur later in the

day. Half cooked meat and certain other articles of food seem to favor the onset of the diarrhoea. Severe pains in the epigastrium, of short duration and followed by intestinal griping, with an imperious desire for evacuation associated with a feeling of anxiety, are among the first symptoms. The stools are profuse, of pure biliary or mixed biliary and faecal composition. A sense of well being follows the evacuation. This is apt to be an every-day occurrence. The treatment must aim at influencing the bilious and nervous constitution of the patient by hygienic and dietetic measures. In order to diminish the reflex irritability of the digestive tract, a few drops, up to eight, may be given of the tinctures of opium and belladonna—to be taken before the meals which give rise to the diarrhoea. Before each principal meal, 100 g. of vichy water, heated to 45 degrees C., should be prescribed, to which are added two spoonfuls of a solution of 40 g. natrium sulfuricum in 300 g. of water. If these cases are associated with constipation this should receive the proper treatment.

Surgical vs. Medical Treatment in Gastric Hemorrhage Due to Ulcer.—Mackenzie (The Practitioner Nov. '08) quotes from numerous sources concerning this subject, and concludes as follows: Hal White says haematemesis is rarely directly fatal, and frequent recurrence is important rather than the amount of blood lost at one time. Mayo Robson thinks medical treatment is generally successful, and moreover the bleeding may be oozing from capillaries, or arterioles, in which case operation would be useless. He says when, with distinct signs of gastric ulcer preceding the haemorrhage, sudden haematemesis occurs with great loss of blood, accompanied by syncope, a large vessel is usually the source. Operation is then advisable if it does not speedily yield to medical treatment. In bleeding from chronic ulcer whether slight or severe, surgical treatment is demanded, not only for arrest of haemorrhage, but also for the curative treatment of the ulcer itself. Sir Dyce Duckworth thinks that operative treatment for gastric haemorrhage in young women is in the majority of cases undesirable. Hartmann does not think a great haemorrhage indicates operation, for the operative mortality is high, the cure by medical treatment frequent. On the other hand, small and repeated haemorrhages require surgical treatment.

The weight of opinion is in favor of operation in cases with repeated haemorrhage unchecked by persevering medical treatment. Surgeons differ, however, as to whether interference is called for after one or even two profuse haemorrhages. Operation during the haemorrhage is a serious matter, for, as Tuffier says, the danger of the operation has to be added to that of the accident itself. Moreover, it is by no means certain that, having opened the stomach, the surgeon will be able to find the source of bleeding, or check it when found.

The Treatment of Acne Rosacea.—Zeissl (Munch. Med. Wchschrft, Nov. 20, '08). In a series of cases of acne rosacea the author succeeded in gradually removing the eruption by means of painting with undiluted iron chloride. The applications were repeated every morning and evening, and resulted in a complete cure. A somewhat solid crust is apt to form at the end of four or five days, and the paintings should be omitted until this crust is cast off spontaneously. When there is much tension the surface may be covered with a clean rag that has been thickly spread with Wilson's salve or some other suitable ointment. In the presence of severe inflammation, an ice bag may be applied. As a rule, frequent interruptions are unavoidable, and the treatment is therefore likely to last about three or four months until the cure is complete.

The Presence of Tubercle Bacilli in the Blood.—Rosenberger (The Amer. Jour. of the Med. Sciences, Feb., '09), states that he believes that all forms of tuberculosis is a bacteriaemia, and offers as proof the fact that in every one of 50 cases tested he has been able to demonstrate the bacillus in the circulating blood. In only one instance was any other pathogenic organism found; consequently he considers that mixed infections are much less common than has hitherto been believed.

The technique is as follows: Under aseptic precautions 5 c. c. of blood are taken from a vein of the arm. This is at once placed in an equal amount of 2 per cent. sodium citrate in normal salt solution. The mixture is well shaken and placed in a refrigerator for 24 hours. At the end of this time a quantity of the sediment is pipetted off and a rather thick smear is made on a glass slide. This is dried by moderate heat and the slide is placed in distilled water until complete laking of the blood is resulted. The slide is then stained by the usual method for tubercle bacilli. The organisms as a rule were found in the first slide, but in several cases three slides were thoroughly searched before any were demonstrated.

The Lungs and Heart After Abdominal Operations. Von Lichtenberg (Münch. Mediz. Wochen., March 2, 1909) has studied the behavior of these organs in fifty-two men and forty-eight women, 10 of whom were in the second, 24 in the third, 29 in the fourth, 18 in the fifth, 10 in the sixth, 8 in the seventh and 1 in the eighth decade of life. Thirty-five of the operations were for hernia, 23 for appendicitis, 10 for gastric diseases, 20 on the biliary passages, and 12 for various abdominal lesions. Chloroform alone was used in 15, ether in 16, mixed chloroform and ether in 36, local anesthesia in 32, and lumbar anesthesia in one. Von Lichtenberg found: Postoperative complications in the lungs occur much more frequently than is usually supposed, because in a great number of cases they run their course wholly unmarked; slight temporary rises of temperature in the days immediately following an aseptic operation are usually caused by such occult complications of the lungs. These postoperative changes cannot be called postoperative pneumonias in the usual sense; they rather form the basis for the development of such complications; and in the absence of favorable conditions can retrograde in a few days without having caused much injury to the patient operated upon. Most postoperatic pulmonary complications appear immediately after the operation and are physically demonstrable on the second, third and fourth days; the method of anesthetization exerts no influence whatever upon the number of pulmonary complications. cases of narcosis pneumonia are rare; in the great majority an embolic genesis must be assumed, while hypostatic forms occasionally occur. Extensive heart disease plays a less important part in the etiology than changes of relatively less degree in the vascular system and myocardium. The presence of an occult pulmonary complication may be inferred from the restric-

tion of the movability of the borders of the lungs during the days immediately after the operation. Conclusions as to the condition of the circulation may be drawn from observation of the pulse curve in any particular case and medicines may properly be prescribed for the support of the circulation.

The Principles Underlying the Operative Treatment of Strabismus are discussed by E. Jackson (J. A. M. A., Jan. 2, 1909). The ocular movements are executed and controlled by nerve impulses, originated and guided by visual impressions; when these nerve impulses are faulty and cannot otherwise be sufficiently modified to produce normal movements, readjustment by operation is appropriate. This readjustment may be accomplished: by giving greater effect to certain impulses, advancing the insertion of a muscle; by diminishing the effect of certain impulses through tenetomy, setting back the insertion of a muscle; by transferring the impulses so that they will produce results different from those to which they were originally directed,lateral displacement of insertions; by combining two or all of these changes. Tenetomy allows retraction of the tenotomized muscle and also retraction of its opponent which is no longer resisted. The increase of power secured by muscular advancement may be temporary or illusory; only modified nerve impulses are required to increase or diminish the power of any muscle. All muscle operations, temporarily suspending function, are followed by degenerative changes in the muscle substance. Operation on a muscle should be undertaken only after careful consideration of all the movements in which it takes part, either as a primary or secondary rotator of the eyeball. The more important object in the treatment of strabismus is to bring about a muscular equilibrium; static equilibrium so that muscular rest will leave the two eyes fixing the same point in a central position, and dynamic equilibrium, balanced movements, easy binocular fixation of greatest usefulness around this central point. A less important object is to secure movements, from this central point, of greatest range and with the least expenditure of effort. Where these objects are not attainable by increasing the power of a certain muscle or muscles they are to be sought by diminishing the power of opposing muscles or by transference of muscular power from one movement to another.

Intestinal Indigestion.—The treatment is based upon the pathological findings and will vary with the cause of the condition and the degree to which the various factors obtain (P. J. Cammidge, Lancet, Jan. 23, '09). We must first find a suitable diet; the examination of the feces must furnish the guide to this. We may thus learn the types of food which are undigested and which have been contributing most to the intestinal irritation. There should be the longest possible interval between the meals in order that the digestive organs may be given a maximum amount of rest. We may also give this rest by having one meal rich in carbohydrates, while the next is chiefly proteid. We give foods rich in proteids where there is hyperchlorhydria. In this condition we give besides p. c., an eggspoonful of a mixture of sodium bicarbonate, magnesium carbonate and calcium carbonate after meals (aa pa); or Petri's mixture of 1 to 3 pts. hydrogen dioxide in 200—300 c. c. water in the morning, fasting. In cases where the bacterial element predominates (as evidenced by toxemia) butter milk, or milk "soured" with a reliable culture of the Bulgarian lactic acid bacillus, often gives very good results. Sometimes, however, such milk rather aggravates the intestinal discomfort and must then be given up. Cammidge has several times relieved these toxic symptoms by inoculation or administration by mouth on an empty stomach, of vaccines. Castor oil or calomel (in 1—4 grain doses) is a useful preliminary to other treatment. Pancreatitis is indicated by the "pancreatic" reaction in the urine and the analysis of the feces; here we must find the cause. Pancreatitis is never a primary disease, although the symptoms to which it gives rise may be the dominant features of the case; we thus would labor in vain to attempt to cure the pancreatic condition without at the same time treating the cause. If infection of the duodenum and pancreatic ducts is in evidence the treatment of the duodenal lesion should be undertaken along the lines already indicated. Urotropin Cammidge believes to be the most useful drug in affections of the pancreatic duct and biliary passages; he has found cases clear up in a week under it. It is somewhat irritating in large doses, and may thus possibly increase the inflammatory reaction in the pancreas; Cammidge therefore usually prescribes it in 5 grain doses, well diluted, tid. Salicylates, while they do not act as quickly or as efficiently as the urotropin, yet are useful, being excreted by the pancreas and having no antiseptic action on the contents of the ducts. In the more chronic cases with marked disturbance of the functions of the pancreas, cholecystotomy or cholecystenterostomy may be necessary, the infected ducts being drained through the common duct and gall bladder. It is primarily important to recognize and treat intestinal indigestion early because of the discomfort to the patient and also because of the resulting interference with nutrition; but the complications and sequelae that are likely to occur are of no less importance. Toxemia may entirely unfit the patient for any occupation involving mental strain or concentration; many of these patients drift into the heterogenous groups of "neurosthenics. Cammidge finds diabetes to be a remote consequence of chronic intestinal indigestion; here the pancreas is apparently involved, though we do not now know why some cases of chronic pancreatitis due to infection of the ducts should develop glycosuria whilst other and apparently quite similar cases do not. The progress of the diabetes is usually slow and although glycosuria has occured in several cases within a year or two of the first appearance of the symptoms of intestinal indigestion, others have dated back the initial attack 10 or 15 years, in Cammidge's experience. He maintains that the treatment of diabetes is largely prophylactic; and believes that in the early treatment of disturbances of the chemistry and bacteriology of the upper intestine lies, in part at least, the solution of a difficult problem.

Infection and Immunity.—J. W. McLaughlin (Med, Rec., May 1, 1909) finds it to be conceded that artificial or acquired immunity resulting from an attack of the disease immunized against or from inoculation of the pathogenic agents of the disease is a condition of the organism caused by specific antibodies or by immunizing tissue changes of the body. A knowledge of the

nature and action of pathogenic agents, of the origin and nature of specific antibodies and of the character of changes produced in the body tissues by toxins is clearly necessary to a rational understanding of infection production and immunization; our present knowledge is not sufficiently definite to this end. The "internal forces of matter" must consist of more than molecular heat energy; and behind molecules and independent of the transformation of heat energy there are unknown forces —properties of matter—which determine mechanical combinations. McLaughlin reviews the present conception of molecular structure and molecular energy; the addition of two new features will make it apparent that molecular energy is derived from molecular structure, and that the changes of matter in chemical reactions result from the interaction of atomic and molecular forces in securing equilibrium in end products: The first is the presence of universal ether surrounding atoms in the molecules and accurately reproducing the vibrations in ether waves; the second is an adjustment of conflicting ether waves in the molecules by "interference," into waves of energy whose periods coincide in crest and trough. "The energy of a molecule is an exact reflex of its chemical and physical structure." Regarding the conditions under which molecular energy becomes catalytic energy: A catalyst is not a definite chemical substance, but a substance possessing a definite physical structure. Toxins and pathogens are to be classed as catalytic agents, just as are ferments and enzymes. Specificity of action and the production of specific antibodies are features which definitely characterize catalytic reactions. The specific selective action of a ferment for a substrate is coincident in crest and trough of the wave periods of the two substances. McLaughlin concludes that "pathogenesis is a catalytic reaction in which the pathogen or toxin is the catalyst, a group of albumin molecules is the substrate, and a specific antibody the end product. In this process the albumin molecules of the substrate are dissociated and transformed into a toxalbumin, and this is the essential cause of the disease produced, the type of which is determined by the character of the toxalbumin, and the character of the toxalbumin is determined by the species of pathogen and the vulnerable substrate engaged in the reaction." An antibody—for example, an antigen to a pathogen, or an antitoxin to a toxin—combines with, neutralizes and thus renders harmless the pathogenic agents; but since such combinations are bodies foreign to the organism they are soon disposed of, and the immunity produced by them is transient in character. On the other hand, immunity produced by the destruction of the substrate is lasting, and will remain until the substrate is restored.

Tracheobronchial Adenopathies. C. Leroux (Ann. d. Med. e. d. Chir. Infant) discusses their relation to chronic pulmonary tuberculosis in children. Bronchial glands are frequently enlarged in nursing infants and children; whilst on the other hand apex tuberculosis is more frequent in children from twelve to fifteen years. In nearly all cases of enlargement of the bronchial glands a diagnosis is possible if looked for in the right way. Radioscopy is of great value. The physical signs are rough respiration at the apex without increased vibration or bronchophony; the apex is probably involved as soon as bronchophony or increased vibration can be made out. The source of the tuberculosis is rarely intestinal; but much more frequently by the nasopharyngeal lymphatics or the skin, reaching the cervical or subclavicular glands; or a pleurisy or pneumonia that has left a good soil for pathogenic bacteria. This is one of the most curable forms of tuberculosis; uncured, however, it may end in pulmonary, meningeal or peripheral tuberculosis. Such children should be removed from their unhygienic surroundings and placed for a long period in the country or at the seashore. A short sojourn does not give a permanent cure.

Thoracic Aneurism. T. Oliver (Lancet, Apr. 3, 1909) reports one case, the history dating back twelve years. On admission to hospital there was dyspnoea, some increase of arterial tension, rapid and irregular pulse and albuminuria. The patient died a month later, no positive diagnosis having been made. Autopsy: Chronic pleuritic thickening and effusion, atheroma of the aorta and contracted kidneys. About one inch from the aortic valve was an aneurysmal dilitation of the vessel extending almost to the origin of the left carotid and left subclavicular vessels, while beyond the commencement of the descending aorta there was a fusiform dilitation. The main aneurysm (which was saccular) held a definite daughter saccula nearly the size of a golf ball, springing from its anterior surface and pointing forward. The aneurysmal dilitation extended to the root of the innominate but not to vessels arising from it. The interior of the aneurysm was occupied by a firm, decolorized clot; but this did not extend into the innominate artery to block it. No involvement of nerves in the sac was found. Oliver considers that thoracic aneurysms, especially sacculated, are frequently cured by nature.

Lachrymal Duct Obstruction.—J. C. Berry (Bost. Med. and Surg. Jour, April 29, 1909) finds that ordinary cases of dacryocystitis in infants require no treatment other than nasal cleanliness, boracic acid collyria and slight pressure over the sac; more persistent cases may require nasal aspiration or possibly the passage of the lachrymal probe; obstruction is sometimes due to membranous closure of the nasal end of the canal; intranasal inspection is always prudent and at times necessary when probing the duct; the seton is a very promising remedial agent in certain cases. In adults the ideal treatment is by gradual dilatation, avoiding violence to the membrane of the canal; if this proves unsuccessful then division of the stricture with rapid and full dilitation is necessary. Dilitation beyond 2 mm. (Bowman's probe No. 8) is seldom necessary; forced dilitation to 4 mm. (Theobold No. 16) exposes the eye to nasal contamination and lessens the propulsive power of the sac. The leaden style can be employed to advantage between treatments, reducing the frequency of probing and favoring absorption of hypertrophied tissue by continuous pressure. Acute cases of inflammation of the sac can be aborted if seen early, the treatment being to wash out the sac, inject argyrol and follow with hot stupes of lead and laudanum, general antiphlogistic treatment being observed. Following phlegmon, the passage of the probe should be delayed until swelling and induration subside.

Sewage and Tidal Waters. G. A. Soper (J. A. M. A., April 17, 1909) describes sewage disposal problems with regard to rivers, harbors and tidal waters. The neces-

sity of this has become obvious within the past three score years; of the twenty-six European and American cities of over 500,000 population about one-half purify their sewage or follow some carefully-devised plan for its disposal. The self-purification of a harbor for assimilating sewage without offense varies according to its shapes and the tidal currents which run to and from the ocean. Sewage discharged on a rising tide is not only apt to be carried toward the land but also to be deposited on the shores—a condition very prone in long and narrow harbors. Wherefore there should be a net seaward discharge, the utilization of outgoing currents and whatever aids the seaward discharge and the diffusion. Diffusion is the gist of the question of utilizing the digestive power of a harbor for sewage. The cost is the only important difficulty in the purification of sewage. This cost for a very large city would be enormous; it is, however, not always necessary to purify all the sewage produced in cities bordering on tidal harbors. It may sometimes be enough to purify the discharge of some of the principal sewers; and even then the highest degree of purification need not in every case be needed, but only enough to make the sewage harmless when finally discharged into the tidal waters. Contrary to the general belief it is practically impossible to recover the manurial ingredients of the sewage so that the cost of handling it may be reduced; and the bacterial processes at present perfected do not aim to recover the fertilized matter. Sewage irrigation has been utilized in some large cities (as Paris and Berlin); but this requires great areas of land and is profitable when the suitable land is cheap or the sewage is useful for the water it contains. Screening, settling and grease removing are extensively practiced in Germany when sewage is emptied into rivers which are not used for drinking purposes; the cost is comparatively small and the esthetic advantage is large. Sewage purifies itself through aeration by a process of slow combustion. Otherwise offensive smells are produced; but these do not themselves convey infection, and there is not much evidence that a great deal of sickness is produced by simple harbor pollution.

Fibrinous and Sero-fibrinous Pleurisy. F. S. Lord (Bost. Med. and Surg. Jour., April 15, 1909) finds from animal experimentation with serous exudates in pleurisy and from after history of cases of pleurisy that at least three-fourths of the primary cases with effusion are tuberculous—the latter disease being fully developed in from four to six years. All such cases should be considered tuberculous until the contrary is proven. The general health should be maintained at as high a level as possible; catharsis, diuresis, diaphoresis and the thirst cure are practically useless. A reduction in the amount of sodium chloride injected may be considered; but the value of this procedure (in the removal of inflammatory exudates) has not yet been demonstrated. We may tap in large serofibrinous effusions; where there are pressure symptoms within a given time; in double effusions. Small and medium effusions do not need immediate removal. The airtight trochar with the bottle aspirator are the best appliances. In primary and uncomplicated pleurisy with effusion, in young subjects with from one to three weeks' duration of the disease, the evacuation of fluid which flows in response to slight negative pressure may apparently be safely continued until the first moment of cough, pain or dyspnoea— pressure or other discomfort. In cases of longer duration, in those with complicating cardiac, pulmonary or mediastinal disease, and in patients past middle life, if the operation is done at all, only a small amount is slowly withdrawn without forcible aspiration.

Aural Vertigo. W. S. Syme (Brit. Med. Jour., April 10, 1909) considers the name of Ménière has been given to various and diverse clinical states. The three cardinal symptoms of Ménière's disease are sudden deafness, loud subjective noises and severe vertigo; this complex should alone be called after this observer, though it is in general bad policy to name diseases except on a pathological basis. Syme prefers the term aural vertigo. In non-suppurative middle ear disease, in which the vertigo has shown itself much later than the tinnitus and the deafness Syme has found the treatment of the aural condition to be more likely to lead to the improvement or disappearance of the vertigo. Quinine is the best drug. On the ground that the vertigo is due to labyrinthine anemia amyl nitrite has been suggested. The bromides and iodides are often useful, pilocarpine especially when the aural condition is dependent on congenital or tertiary syphilis. Repeated lumbar puncture has sometimes helped. All exictement to be avoided; the bowels left open; ice to the head and recumbency during acute attacks. When all measures have failed and life is intolerable, we must destroy the static portion of the labyrinth by operation; or it may be possible to divide the vestibular nerve (as distinct from the auditory) before it enters the internal auditory meatus.

Vaccination Under Difficulties.—Even before the Italian earthquake indications of a smallpox epidemic had been observed in certain Sicilian districts and along the Calabrian coast. The confusion created by this catastrophe increased the medical task tenfold. Dr. Giardini tells in the Fieramosca of Florence of the difficulties he and his colleagues had to contend with. Always suspicious and superstitious, the peasants flatly refused to have themselves and their children treated, and the doctors often went about in fear of their lives. They had to resort betimes to strategy. They bribed the elder children with sweets and small presents to bring the babies to them, and thus in three weeks they succeeded in vaccinating four thousand children. The Italian Red Cross Society followed suit by offering extra rations and clothes to those who consented to be vaccinated; but this availed little, however, with the adults. Another plan was for groups of them to go from village to village accompanied by musicians who played merry music in the market places; the curious and unsuspecting villagers who came to listen were unceremoniously seized and subjected to the dreadful operation. On another occasion a number of washerwomen who had gone down to the river bank with their baskets of clothes were surrounded; they squealed and fought tooth and nail, but were all successfully inoculated.

A Modern Plague of Egypt.—The Nile country is at present in the throes of a plague of flies, which, it is declared, have not in many years been such nuisances. Not only this, but flies are the propagators of many affections; in Egypt ophthalmia is especially transmitted in this way. The natives are now suffering dreadfully; and the Government oculists have their hands full attending them.

MISCELLANY

The Young Doctor, observes an exchange, knows more than the old doctor; but the latter gets more business.

Cannabis Indica is an excellent anodyne in the treatment of pain due to dysmenorrhoea, ovaritis, neuralgia and anemia.

Dust and the Sluggard.—It has been observed that there is most dust in the city air early in the morning; if this is true the early riser inhales more dust than the sluggard who leaves his bed in time for luncheon.

A Phenomenal Aortic Aneurism.—Dr. W. Gilman, Thompson, states the Medical Record, has come upon an aneurism of the abdominal aorta of so great size as to cause displacement of the kidneys and erosion of five dorsal vertebrae.

Germany utilizes about 7,500 hospitals, in which some 1,200,000 patients are annually treated. Adding to these the inmates of private sanatoria and patients treated at home, it is estimated that at all times one person in sixty of the population is seriously ill.

Sleep Bacillus in Plants.—The Pasteur Institute in Paris has received a report from Port Louis, Maunitius, to the effect that Davis, a local bacteriologist, has discovered an organism in the Euphorbia pilulifera and similar plants resembling the bacillus of sleeping sickness.

Anterior Dislocation of the Shoulder.—Thomas (Kentucky Med. Jour., June 15, 1909) finds that the usual anterior, habitual or recurrent dislocation of the shoulder is due to a traumatic, cicatricial, anterior hernial pouch of the capsule; the object of operation should be to obliterate the hernial protrusion.

Epilepsy and Hysteria.—In the former the abdominal reflexes may be absent on one or both sides and the plantar reflex may be either of the flexor or extensor type; in hysterical seizures the abdominal reflexes are retained, the plantar reflex may be absent, but if present is invariably one of flexion.

A Syphilitic is not necessarily cured because his children are healthy. (Am, Jour. Dermat.) He may procreate syphilitic children shortly after his infection, go through a good course of treatment, have healthy children, and then suffer from a relapse of the disease, when his children will again become syphilitic.

A Censorship for Medical Advertising.—The authorities of Russia have instituted, states the Vermont Medical Monthly, a censorship regarding proprietaries, apparatus, drugs (and druggists), hygienic and cosmetic remedies, and the professional cards of physicians, dentists, midwives, masseurs, health resorts and mineral waters.

Mosquitoes Cause Ninety Deaths.—It is reported from Cape Town that the heavy rainfall has caused the Orange River to overflow in the Gordonia northern district; this has resulted in breeding swarms of mosquitoes, leading to a serious outbreak of malaria. Three-quarters of the population are affected, and ninety deaths are reported.

Must be Sound to Marry.—A law providing that applicants for marriage licenses must undergo medical examination recently went into effect in the State of Washington; on the first day ten couples appeared with physical defects. Many believe, however, that the new law will make a Gretna Green of Victoria or Vancouver, in British territory.

Influenza is infectious, states W. S. Bryant (Med. Rec.). The bacillus enters through the pharyngeal mucous membrane. The diagnosis is readily made in most cases upon the appearance of the symptoms. Grippe is amenable to proper treatment. The complications of the upper air tract can be avoided by nasal prophylaxis; serious results can be prevented by early operation, after infection has taken place.

The Man With the Spade, as Bellevue physicians call him, was recently brought in suffering from "lack of nourishment"; the unfeeling admitting physician looked him over, smiled, and had him ejected. This character is well known to the institution; "he goes about carrying a rusty spade, and he sinks to the sidewalk moaning for food, when passers-by stop to give him money." Such is the particular "lay" by which he imposes upon the sympathetic.

The New York Neurological Institute, a hospital for the treatment of nervous and mental diseases, will open in September; the aim will be to spread among doctors and nurses the principles of treatment of these diseases. Both paying and charity patients will be received. A sanitarium somewhere in the vicinity of the metropolis will be conducted in connection with the hospital. All will be under the medical direction of Dr. Joseph Fraenkel, Dr. Pearce Bailey and Dr. Joseph Collins.

Tuberculous Septicemia.—This, according to Landouzy is a form of tuberculosis causing a subacute septic process affecting successively almost all the tissues and organs, with the production of various anatomical and functional changes of an inflammatory nature. Death usually results from exhaustion. Twenty-five years ago Landouzy pointed out the tuberculous nature of pleurisy; and suggested that the same process might involve other membranes—as the endocardium; also the synovial membrane of joints, giving rise to "tubercular articular rheumatism."

Our Supply of Doctors will, it is expected, number 154,000 in 1910, versus 132,000 by the United States census of 1900; giving with the increased population an increased clientele for every doctor of from 572 to 594. In Europe, states the Post-Graduate, one physician can care comfortably for 1,000 of the general population; even with more stringent requirements than now obtain to diminish our ranks, it will be past 1949 before a proportion is reached which is in Europe deemed normal. We are over thirty-five years in advance of the natural requirements, which means not only individual average suffering for the profession but also a serious economic problem for the country.

Comparative measurements of English and American athletes were made by the physical instructors of the Birmingham Young Men's Christian Association; the figures as a whole show the latter to be slightly larger in every instance except that of shoulder breadth. The American superiority in size is considered to be by reason that our race is the more cosmopolitan, including Swedes and Germans, who are notably of heavier build. Moreover, American youths frequent the gymnasium much more than English youths and are obliged to take a reasonable amount of systematic training. Consequently when they join the men's classes they have already made a good start in systematic development.

A CONTRIBUTION TO THE TREATMENT OF CANCERS.*

BY C. G. AM ENDE, M.D., NEW YORK.

IT is hardly necessary to state that what I wish to lay before you is not a so-called cancer cure, or that I wish in any way to detract from the importance of the early local operation with its approximately thirty per cent. of permanent cures. This leaves for consideration the growths reappearing after operation.

It should also be stated at the beginning that no two cases being exactly alike, each one has to be treated according to its own special condition, and that only general rules may be laid down.

The use, in this treatment of cancers of the carcinomatous and epitheliomatous types principally, of some means, either little or not at all known, and misstatements concerning them that led the profession to misconception and false conclusions, will justify their more detailed description.

The primary, fundamental observation upon this subject was that some sheep thyroids preserved in their natural condition, as if fresh, seemed to give better results in the treatment of certain goiters than the exsiccated material of commerce, some of which formerly was even found to contain substances foreign to the glands.

Next followed the discovery that there occurred several natural varieties of sheep thyroids, materially differing from each other in shape, size and color, and also to quite an extent in their physiological properties. One, the most active in the treatment of early goiter, seems most prone to produce tachycardia and gastric disturbances. Another, less, so, turned out to contain an organic compound having the property of neutralizing or antagonizing cancer toxins. A third variety is of less interest.

An extract of these glands lost by careful drying, without heat, its solubility in water or dilute alcohol. The process of drying, it follows, involves a partial molecular decomposition of the soluble substances of these glands, including with reasonable probability their antitoxin. For obvious reasons nobody thinks of offering diphtheritic or any other antitoxin in dried state, to be redissolved for use. In perfect analogy then the thyroid antitoxin cannot be expected to be obtainable from or be found in the dried glands of commerce; nor can the latter yield the results of the natural organ.

These considerations led to the production of a fluid extract that would retain that apparently special antitoxin in its original natural condition. Judging from its effect in an advanced case of Graves' disease this fluid extract may also contain a very small percentage of Beebe's antitoxin. It differs in every way from the German thyroidin.

The antitoxic properties of this extract, available to fullest extent by its complete freedom from producing any cardiac or gastric disturbances, manifested by restitution of bodily and mental vigor to patients suffering the exhaustion, and in a few cases, almost complete prostration of advanced carcinomatosis, so that they began to walk increasing distances, take up again previous occupations, visit friends and theatres, and have a good time each in his or her way.

When the patients were sufficiently strengthened to come to the office for additional treatment by the Roentgen ray, this latter was found to bring about disappearance of deep seated, and as yet soft tumors, some quite large, or edematous infiltrations; a result not obtainable by the use of the extract itself, nor by the general consensus of opinion by exposure to X-ray alone.

These tumors included metastatic developments in the so far healthy female breast subsequent to resection of the other; one such case under the personal observation of your esteemed president; oedematous extensions along the vaginal walls; one case of extension descending within the rectum, and amongst others an especially notable extension from the sigmoid flexure upward into the abdominal cavity with a considerable bulging of the left side. When this subsided a curved wormlike thickening could be felt deep in the pelvis, interpreted as the scar from the attempted resection of the carcinomatous sigmoid. Soon after this, too, disappeared. Its recurrence about eight months later, following a cessation of treatment, yielded to a short course of raying. A singular result obtained in the case of a breast tumor that has remained well for now over two years.

The delight and gratitude of these patients for this prolongation of active life, in one case fully twenty-one months, free from pain and with new hope, was expressed in the most gracious and touching ways and was continued through supervening, and in their weakened condition, rapidly fatal maladies, as nephritis in several, a general peritonitis, hepatic sclerosis, etc. In sharp contrast thereto was the declining, often dignified attitude of others. However, this was no cancer cure as the laity understands it.

Of the other subdivisions of cancerous disease the last case of epithelioma, extending from the dorsum of the nose over the left ala, yielded to accompanying medication in seven treatments in intervals from one to two weeks.

A single case of sarcoma, diagnosed by symptoms yielded to about thirty rayings, thus confirming Dr. Judd's experience; but because of its easier obtainable success Coley's method would seem superior. Incidentally the question arises whether there may not exist a greater difference between carcinoma and sarcoma than the merely structural.

The results briefly outlined were all obtained by X-raying in the usual manner. Although halting at the hard, nodular forms of recurrent malignant disease, and extending to the softer only, the role of the Roentgen rays in this work assumes much greater importance than is conceded by many, and it is bound to increase greatly.

Regret, therefore, may very properly be expressed for the often unconquerable fear of the X-rays, especially in female patients. Like fire, productive occasionally of severest destruction, but of indispensable benefit and usefulness, their good qualities so far outweigh the bad that all agencies of public enlightenment should assist in allaying that fear.

In administering the rays the strength of current, distance of tube, and length of exposure varied according to tissue, whether open wound, mucous membrane, or skin. Six-inch tubes in combination with the thyroid extract, at first in large doses, two teaspoonfuls a day, but later on decreasing to thirty or twenty drops, seemed to give the best results. (One teaspoonful contains the

*Read before the Medical Association of the Greater City of New York, March 15th, 1909.

substances extractable from two drachms of the glands.)

In the search for the causes of the inefficiency of the rays upon a carcinoma and the hard nodular recurrences, also resistant to chemicals, failure of penetration seemed the most natural. To overcome this and for that object a very effective interrupter by Dr. Branth was used. Then it gradually developed that with a special lengthening of the spark gaps nodules heretofore resisting would lose their hard feel or disappear. A carcinomatous ulcer so far extending began to recede. The rate of interruptions by Branth's apparatus were approximately 1,000 per minute. Then inserting a Wappler apparatus giving up 140 per minute the obtained advantages were undoubtedly disappearing. It seems strange indeed that the apparently continuous stream of the immense number of rays from the tube, and also a low rate of emission should fail to accomplish the result from a rate intermediate between the two.

In the search for an explanation, because of its practical value, three facts are guiding.

One, easily verified, by an approaching finger is that upon exposure to X-rays the patients become overcharged with electricity. For some of them a peculiar feeling of anxiety necessitates connection with the ground. As the second, we have that this electrical overcharge without any doubt comes from the rays. The third, as known to all, is that in use the tube becomes exhausted of its gases.

In or with the rays, grossly speaking, are propelled highly electrified ions of oxygen and nitrogen at an undulation rate of approximately one seventieth of a micron, and proceeding seriatim, wave like. Upon an impact this briefest wave length is reduced to a longer one with of course release or spending of some force at the point of striking. As to the nature of this force I have no explanation to offer, save that some effects of the X-rays upon superficial structures would seem its manifestation. But not all X-rays break up at the surface. The undisturbed passage of some, perhaps beta or gamma, without any or but slight changes of their wave-lengths is suggested by the illumination of bones, and softer, more homogeneous media should offer less obstructions to these waves.

As already stated, a mildest, uninterrupted electric current, one m. a. and less, produces within the animal body, as elsewhere, atomic disarrangements and chemical changes, manifesting physiologically, similar but greater changes should follow the dispersion inward of the X-ray waves. The disappearance of the gases, oxygen especially, from the tube may determine these changes as oxydative, greater or more destructive at the surface.

For a conception now as to the effect of an X-ray stream whether continuous or interrupted may serve a light. Receiving its waves in a continuous stream by looking at it may strain the eye, but frequent interruptions irritate disagreeably. The oscillatory current effect, as it were, produces greater disturbances and disarrangements than the even.

Now, then, considering that cancer cells are not normal embryonal, but irregularly produced (although possibly yet by a more active agent) and assembled cells, only resembling the normal, and very liable to necrosis, as they would seem to cause necrosis of the normal tissues at whose expense they thrive, they would seem less likely to be able to resist the influence of the mentioned electric propulsions, and more prone to undergo molecular disintegration; and, furthermore, would seem necessary the lapse of a certain length of time for the completion of the reaction.

The number of cases exhibiting this process and its extent is altogether too small for any general conclusions. They can only serve as suggestions or guides for future work, and emphasize the importance of the earliest possible detection of any symptom of recurrence.

For the breast retarded healing is suspicious; impairment of mobility and some oedema of the arm become pathognomonic, especially in the presence of a now yet soft gland. In one primary case a firmer consistency of a part of a breast with frequent darting pains but yielding to a short course of treatment was subjected hereto because almost any persisting abnormality in the breast of a woman of advancing years may develop malignancy.

Should wounds in the mouth ever be cauterized? Although in one instance a firm gland under the clavicle disappeared under treatment, bones, as a rule, protect underlying structures from the active rays. The thyroid cartilage may prove penetrable, but two cases where this seemed so, are debatable. For the raying of cavities the use of specula, mostly rubber or metal, was preferred.

Concerning chemicals as adjuvants, thiosinamin was discontinued because of its probable effect upon the wall which nature throws up in defense sometimes against extension of the growth.

A drug of some usefulness is carbonate of creosote. It seems the best disinfectant for the frequent invasion of ulcerations by the germs of putrefaction. In a case partially sarcomatous it was also given internally.

Contraction of the morphine habit, bad enough in itself, renders the patient unwieldy and hastens the end. In one of my cases a lady became able upon cessation of pain to free herself from it.

Protection of parts dangerously near the tube, or desired not to be exposed is obtained through chamois skin as well as and much more comfortably than through lead foil.

Concerning recurrences, and chances of success in treating them, the various diathesis, congenital and senile, or atrophic tendencies have apparently not always received the attention they deserve. The congenital, especially, should vigorously be taken in hand after leaving the hospital, the many idiosyncrasies and fads of such patients notwithstanding.

The greatest detriment in this work is the a priori conviction of many that any treatment save operative is of necessity doomed to failure and useless. The first positive observation as to the effect of frequently interrupted rays was the arrest of the spread of carcinoma along a lip. A little later an intelligent lady patient stated that a decided improvement followed the use of "the little sparks." Small firm nodules disappeared under plain raying, and as each such is a focus of incipient, local malignant manifestation, their elimination is not unimportant.

But in the growth of large ulcerations retardation only has thus been achieved.

The comparatively little so far achieved would have been impossible without the sympathy and aid of a few

friends, the late Dr. William R. Pryor, his successor, Dr. J. C. Taylor, and above all, your esteemed president, Dr. R. T. Morris, and, too, Dr. A. Judd, to all of whom my sincerest thanks are herewith tendered.

Post Scriptum: Quite appropriately a brief report may be added to the above upon the result of the analogous treatment in two cases of Graves' disease. One was a medium sized, unilateral goitre, complicated with incipient mitral stenosis, palpitations and quite some dyspnoea. This yielded to six treatments of five minutes duration once a week or two, and daily twelve drops of thyroid extract with the one hundred and fiftieth part of one grain of strychnine. The other, as yet under treatment, was a large goitre of recent development with quite some difficulty in swallowing and dyspnoea. Weekly five minute treatments and fifteen drops daily of the thyroid extract have so far effected considerable diminution in size, so that the patient can again wear his old size of collar, and there is complete absence of dyspnoea.

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SOME MEDICAL CONSIDERATIONS IN THE TREATMENT OF GASTRIC ULCER, WITH SPECIAL REFERENCE TO THE USE OF BELLADONNA AND X-RAY THERAPY.

BY ANTHONY BASSLER, M.D., NEW YORK

THE main purpose of this article is to advance for consideration and more general employment the use of belladonna for the purpose of controlling coexistent excess secretion in gastric ulcer, and the therapeutic use of the X-ray in the repair of the subacute and chronic ulcer, particularly those which are more or less cicatrized.

It is now generally accepted without a peradventure of doubt that the one best general treatment for acute gastric ulcer is rest in bed. Added to this, measures pertaining to the nutrition of the patient demanding the least amount of stomach function are essential. The usual accompaniments of acute ulcer are hypersecretion and hypermotility of the organ. These militate against the repair process of the ulcer, and must be met by the use of foods which are not over stimulating in these directions, and a fluid diet consisting essentially of milk and eggs, frequently given, and in small doses to meet these requirements best.

The question as to the value of the Leutartz method of feeding, above that of the time honored abstinence from food by the stomach route for the first few days, will always remain somewhat in doubt as a definite measure for all cases. This is because clinically speaking stomach ulcers are met with all the way from those with no symptoms, to those with very severe. The severer the symptoms of boring pain and vomiting, the less the Leutartz method should be thought of for the first few days; but in the average case it usually deserves early institution.

While the Leutartz treatment possesses worthy advantages in the way of maintaining better general nutrition, and thereby indirectly favoring better repair of the ulcer, there is one factor in its use which has not received enough attention, and this is that in the larger quantities of protein given (while such might bind the excess acid for the time being) it also encourages a higher secretion of it because of the chemical nature and quantity of the food taken (coapitation juice of Pawlow). It is plain, therefore, that while this treatment is indicated in one way, it is counter-indicated in the other. For this reason, the use of belladonna (or atropine) taken by mouth, is a measure worthy of adoption in the cases in which excess secretion and motility exist rather than the one of increasing the quantities of protein as the gastric function is "worked up."

Belladonna is a drug which combines the faculties of controlling secretions and movements of the gastroenteron. It can be given along with the Leutartz treatment, or employed when no food is given by mouth. When begun, its administration should be steady in moderate sized doses and continued until its constitutional physiological effects are obtained. This is usually brought about, in the average case, by 0.5 grm. quantities of the tincture, given at three or four hour intervals, in about two days. At the onset of the symptoms due to the drug, its employment should be continued in about one-third of the above mentioned quantities, and maintained all of the time that the patient remains in bed. The running amounts of the drug then taken should always be short of again producing or maintaining the physiological effect produced in the first instance.

In cases of acute gastric ulcer which present marked vomiting of sanguineous acid fluid, or intense boring pain in the stomach after feeding, the use of belladonna is often most striking in its results. It seems as if when the gastric secretion and motility are held in check by its use, the subjective symptoms are at once ameliorated, and since apart from the comparatively slight disagreeable features of dryness of the fauces, dilatation of the pupils, etc., from it, it is the medicament par excellence for these cases, and about which in this connection, the following advantages may be enumerated.

1. It effectively and always positively controls excess secretion and motility, thereby favoring repair of the ulcer.

2. It holds in check the worked up stomach secretion which the Leutartz treatment is liable to bring about, and thus holds back less hydrochloric acid to be bound by the proteids.

3. It has a better effect on the relief of the symptoms of pain, vomiting, hemorrhage, and local gastric distress than any other medicament—bismuth, silver nitrate, and the alkalies all included.

4. It does not interfere with the binding or digestion of the protein content of the Leutartz feeding, since such acid as may be secreted the protein will care for, and such excess proteins not so met with can be cared for in the small intestine.

5. It is easy of administration to these patients in the way of being small in dose, almost tasteless, easily borne, does not interfere with the digestion, and can be taken on an empty stomach.

6. And lastly, the great bugbear of distension of the stomach of an atonic nature is not brought on by its use, when only the smaller sized doses are employed in the running way after the first few days.

For the repair of a gastric ulcer, a cicatrix must be formed which is smooth and even on the gastric side and complete in structure. There is no doubt that the

commonly seen aftermath of symptoms in cases of acute ulcer, coming on after or existent from the acute clinical days are as often due to an incomplete state of repair of the glandularis and resulting unfavorable conditions persisting in the stomach, as are these symptoms due simply to persisting hyperchlorhydria, a sensory disorder of an irritative type, resulting atony, etc. In fact, it must be the first thought of the attendant in every such case which, after leaving the bed, continues to complain of gastric symptoms, that the ulcer is not in a good state of repair, rather than assuming that the cicatrix is perfect and that now only a neurotic condition exists. A cure is a cure in all that the term means, and not an assumption based solely upon the fact that at one time the patient was in bed for weeks and now he is about again. An internist myself, I would warn all not to be too respectful of the large statistics of cures of acute gastric ulcers which my internist colleagues have advanced in the past, for the many of these cases which I have seen, which they have treated and tacitly discharged with happy words, are still to be cured. Since then the repair of an ulcer is always a matter of question—even when no gastric symptoms of moment persist—let us not be too hasty in compiling such final reports, and continue our observations and medical attention until at least one year has elapsed without any gastric symptoms. Leaving out of consideration general, and all medical measures pertaining to the direct welfare of the stomach itself, I desire to advance a new one for the care of these cases, one old and often much abused, but still new in this connection.

We are all familiar with the mysteriously wrought beneficial effects of the X-rays in skin affections and particularly their stimulating properties in the repair of cutaneous ulcers of all types, and its discutient effect on cicatricial conditions, such as may be seen in scars of healed furunculosis of the neck, cicatrices from injuries, keloid, etc. Now if such can be accomplished in the skin, have we not a reason to believe that ulcers or cicatrices from them in the stomach (which when empty is not much less accessible to the rays than the skin) may likewise be favorably influenced by its use? My interest in the use of the rays began with a case of acute gastric ulcer which persisted in giving gastric distress after the acute stage, and in which surgery seemed to be the logical therapy to advise. (Case 1.) Since then I have used it in three others with the result that three of the four are to-day entirely well in so far as their gastric symptoms, and what I could learn from test meal and faeces examinations, and clinical measures, are concerned. The fourth one began treatment two years after the acute course of the ulcer, showed no benefits from the treatments, and was finally relieved by gastro-enterostomy. In addition, I have treated with success two cases of chronic ulcer in the aged.

The above six cases represent individuals who were seen by me the first time more or less late in the course of this condition, and had previously been diagnosed and treated by others before I saw them. Judging from their histories and my own examinations I believe each of them to have been cases of gastric ulcer of the distinct clinical type, either before (acute), or in the two chronic ulcers, at the time that I saw them, and that in each of them, an ulcer, or an incomplete repair, or an irritated or stiff scar existed at the time of the rayings.

While the therapeutic use of the rays is by no means a panacea in the treatment of such conditions, and is not offered as a substitute for surgery, it is a measure in my belief, which, along with dieting, medication, etc., is worthy of adoption; firstly, because its use will not interfere with any medical treatments that may be instituted in the case; secondly, its use seems to be logical; and lastly, because of the success achieved in these few cases. One must be careful, however, since these patients are usually so anxious about themselves, impressionable to psychic influences, usually neurotic from long standing pains, etc., that the benefits derived are not suggestive in nature, and that the subjective benefit derived is not put down to a better state of stomach conditions, unless such can be proven by test meal or faeces examinations, or by physical methods. Anxious as I am that the X-rays will receive a more extensive trial in these cases than is possible by me, I would much prefer that such good results as may be reported would be bona fide ones in only plainly evident cases of these conditions. Only in this way and with a much greater number of such cases treated than I have had could its true value be learned. Of late, I have used and advised its use in every case of acute gastric ulcer I saw beginning with the time that the patient left the bed. It is usual to find that during the course of treatments the excess of HCl. secretions becomes less; whether this is directly brought about by a better state of repair in the stomach, an atrophic effect on the acid cells in the gastric tubules by the rays, or only indirectly so, I am unable to say. In three of my cases slight gastric bleeding existed in a continued way, and the hemorrhage stopped in all in about the third week of treatment. The stomachs usually become less irritable to foods, and thus post meal pain and distress, nausea and vomiting were controlled, and as these subside, patients take more food, digest it better, and improve generally.

The technique of the rayings was simple, consisting of exposures of the center of the upper abdomen, given every other day until the skin showed changes from the rays. The exposures were then discontinued for a while, and begun again in the course of two or three weeks, until at least twenty-five exposures had been made. The stomach should be empty at the times, a tube of medium hardness employed, and the treatments given in the prone position. In a skin that will stand it and in an improving case, the rayings may be kept up for a number of months, or until it is probable that no further benefit from them can be derived.

Case 1.—K. M., trained nurse, German, single, 42 years of age; habits good. Well nourished, not neurotic. History: After several weeks' of an ill-defined indisposition, in which anorexia, gastric pains after eating, and general weakness were features, she was seized with violent pains in the stomach and vomited large quantities of blood from a gastric ulcer. She was taken to the German Hospital, and remained in bed for five weeks, and was treated by the usual methods of rectal alimentation, gastric medication, etc. A second hemorrhage of large quantity occurred while there. Leaving the hospital, although careful how and what she ate, she continued with pains in her stomach, more or less steady nausea, and occasional vomitings. This history

ran on steadily, sometimes better, sometimes worse, for over five months, when she went to Kissengen and took the course at that spa and after which she felt somewhat better. Shortly afterward, however, she again began with her sudden attacks of pain and nausea coming on at different times. It may be reported she had a paroxysm just before leaving Europe for this country, and another the day before the boat landed, with more or less constant gastric distress in the interval.

Physical examination:—Having examined her before she left for Europe and when she returned, I report my findings on both occasions as follows: Her localized area of tenderness in the epigastrium (about 7 c. m. below the ensiform and in the median line) continued to exist. She could bear no pressure upon the lower gastric region (even slight) and was constantly guarding herself from these. Her stomach was slightly ptosed and plainly dilated when she came back, probably due to the drinking of more water at the spa. She had an increased gastric secretion with hypermotility at both times, but no evidence of stomach bleeding at either time; if anything she was worse on her arrival here than when she left, and soon began to vomit more frequently and completely. Other findings negative, excepting that she had a moderate anaemia.

Diagnosis:—Incomplete repair of a gastric ulcer, and anaemia.

Treatment:—After about fifteen rayings she developed an X-ray dermatitis, two weeks after which she began again and was treated all told about thirty times. Her improvement in subjective gastric symptoms began at about the sixth raying and continued until they had practically disappeared almost when the dermatitis occurred. As she improved she grew less careful in the selection of foods and could eat, without distress, almost everything, although she continued moderately cautious. When her gastric distress began to disappear her excess secretion and hypermotility became materially lessened. No medication had been used excepting simple ones to regulate her bowels. She is now at regular work nursing and massaging and apparently well again, excepting at times she has slight distress when she eats too heartily. In the first two months of X-ray treatment she improved in general health from a very ill looking woman to one apparently well. For the past six months she has been working steadily at private nursing in the German and private hospitals. She has had long and irregular hours, and all of the time did massagings in special cases at other times. She has been entirely free from gastric distress of any kind.

Case II.—A. G., cook, Frenchman, married, 52 years old. Slight in build and somewhat nervous in nature, referred to me by the late Dr. J. J. Quigley.

History: Had syphilis at 20 and was under treatment for it for two years at the time. For fifteen years had more or less trouble with his stomach, never severe or causing much interference with his work. The main symptoms in these attacks after meals were a feeling of weight and pressure in the epigastrium accompanied by pyrosis and retching of gas. At these times more or less regulation of foods took place, and occasionally vomiting of the stomach contents. In the past three months he has lost nineteen pounds in weight, probably due to the fact that everything he ate and drank distressed him acutely and he consequently partook of too small quantities to maintain his nutritional equilibrium. Habitually constipated.

Physical examination: Body shows considerable emaciation. Mucous membranes pale, tongue slightly coated in center, edges clean; teeth good, slight pharyngitis, heart, lungs and kidneys normal. Reflexes slightly exaggerated. Upper sections of the recti tense, rest of the abdomen fairly flaccid. Has a localized area of tenderness 6 c. m. below the ensiform and to the left of the median line, and another left of the spinous process of the tenth dorsal vertebra. The slightest point pressure on the abdominal area causes him exquisite pain. Stomach slightly dilated.

Laboratory findings: Ewald test meal extracted by aspiration the next day showed total contents 90 c. c. increased mucus, free HC_1 40 deg., combined HC_1 35 deg., total HC_1 75 deg., and total acidity 91 deg. Lactic acid present in slight amounts (Kellings by ether). Blood present in slight amounts (Benzidin and Guaiac). Microscopic examination showed a poor state of carbohydrate conversion, some red blood cells, a few leucocytes, a large number of squamous cells and some free nuclei, and an increased bacterial flora mostly of the staphylococcic type. After a purge and meat free diet of two days, his faeces showed slight amount of incorporated blood (aloin), a high albumin output, about one-quarter quota of bacteria, in which the anaerobes were increased in numbers, and a thick layer of mucus coating in the surface of the faeces. Blood count, 3,400,000 reds, 7,750 whites. Haemoglobin 81 per cent. Polynuclears 71 per cent. Diagnosis, chronic gastric ulcer.

Treatment: The diet was limited to milk and eggs given in quantities representing two thousand total calories a day. Atropine sulphate in 1-200 grain doses was given every 4 hours, with an occasional morning dose of Carlsbad salts to correct the constipation. The rayings were begun at once, and are still being continued, now three months. After the second week (sixth raying) the man had made such improvement locally that he was put upon a semisolid diet and the atropine discontinued, and on a mixed diet about four weeks later. These meals he now readily partakes of with but slight gastric distress in which pains are not present. He has gained 11 pounds in weight since beginning treatment, feels generally much stronger, and says he feels better than he had in two years. Briefly stated, the three test meals since extracted did not show the presence of blood, gave a lower acidity, and a lower total amount than the first examination. A specimen of faeces three weeks after beginning the rayings still showed the presence of incorporated blood, but in those following this no blood at all (altogether seven examinations of faeces were made in this case).

126 E. 60th Street.

Otosclerosis, states W. S. Bryant (J. A. M. A.), Aug. 1, 1908), is due to trophic changes when disturbances in the blood supply have produced malnutrition of the tympanic contents and walls; the primary causes of the changed circulation are local and general. All varieties of chronic middle-ear catarrh and the stiffening following middle-ear suppuration are various phases of middle-ear sclerosis. Except in very advanced cases the prognosis is good for arresting the process and improving the hearing.

MEDICAL MIRACLES.

BY JOHN B. HUBER, A.M., M.D.

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PART II.

LET us now consider some elementary data in human pathology; to do this is essential to a logical exposition of the subject. In many incurable diseases two kinds of cells must be taken into consideration—the functionating and the connective tissue. The business of the former is to do the work required of the organ—to secrete, excrete, respire, digest and so on. The latter go to support the supporting framework in which the cells which do the work of the economy are imbedded. The functionating cells are the more highly specialized. In nature the more highly specialized structure is always the more delicate; and therefore the more easily deranged and destroyed. The connective tissue cells are of a coarser sort; and they are likely to remain unaffected by agencies inimical to the more delicate cells which they support. So, in severe diseases, mostly of a chronic sort, the latter are destroyed, or they degenerate, or disintegrate, or atrophy; and thus the work which they should do is not done. Meanwhile the hardier sort of cell remains unaffected; indeed, in time they multiply and take the place of the destroyed cells of the higher type. The situation may be likened (very vaguely, however) to a garden in which flowers and weeds are growing. The inclement weather, the elements and the seasonable changes may destroy the more delicate and tendered flowers; but the hardier weeds will continue to thrive, and will in time choke and take their place.

So that structural diseases which result from this loss or perversion of function, such as Bright's, cirrhosis of the liver and locomotor ataxia, become progressively more and more incurable; and were it not for the factors of safety which we have considered, death from them would be much more premature than is the case. The man with the chronic gastritis or the hob-nail liver has had most of his digesting cells destroyed by chronic alcoholism, by villainous irregularities in diet, and by vicious living. His life may be prolonged indefinitely, if he will during its remainder be content to live physiologically; his habits and his regimen may be so regulated that his remaining functional cells will work unhindered; and he may during many years enjoy comparative freedom from suffering. But he is not cured.

Locomotor ataxia is a structural disease which becomes progressively worse, although its progress will, by judicious treatment, be retarded for many years. The patient may die of some intercurrent affection. The lesion is a progressive atrophy and degeneration of nerve cells and their fibres in the spinal cord, and to a sclerosis—an increase of connective tissue cells, which in time take the place of the degenerated structures. The pathogenic process gradually extends up the spinal cord; and the neck may fortunately not become invaded until perhaps advanced age. There is no cure (that is, the degenerated and destroyed cells and fibres are not restored), after the ataxic symptoms are manifest. There are often periods of quiescence when the patient may hope that his disease is checked; at such a time a "healer" may announce the cure, which time will certainly belie if the disease has been in truth locomotor ataxia.

Cancer is a disease which the "healer," in the most heartless way, insistently proclaim their ability to cure. The word means a crab: and it is a malignant growth which sends its prolongations into the tissues about the initial lesion. Operation very early may remove this growth and its prolongations. Some cures by means of trypsin and amylopsin have been claimed; and it may be that these claims will be verified in time. To proclaim that cancer can be removed by mind-cure is to carry ignorance and charlatanry to the degree that they seem veritable nightmares. Cancer is a term often very loosely used to cover all sorts of tumors, varying in malignancy and obstinacy. Epithelioma is a skin cancer, which may be excised completely and permanently by the knife: or it may be made to break down and disappear under application of X-rays or radium. Deep seated cancers are oftentimes impossible of diagnosis. We do not consider cancer is really cured if it returns to the same or to some other part of the body within three years. It is truly a dreadful thing to excite groundless hopes regarding this disease.

XI. To have healed consumption is a very common claim of faith-curists. A great many people get well of incipient consumption; and they die of some other disease. The Germans say well: *Jeder mensch hat am ende ein bischen tuberculose.* In this disease tubercles, at first microscopic in size, form about the germ which is its specific cause. In time, if there is an environment predisposing to the disease, and if pathological agencies are not eliminated, the lungs become studded with a great number of these tubercles, the formation of which is due to an inflammatory process, evidenced by coughing, chills, fever, sweating, weakness and so on. In time these tubercles break down into abscesses, the contents of which are expelled in coughing. With this dissolution there may come, at least for a time, an abatement of the symptoms. The sick man finds himself distinctly better; and with the optimism which Providence has so mercifully bestowed upon the consumptive, he rejoices in his apparent restoration to health. Oftentimes around this tubercle fibrous tissue will form (like the scar after a wound), which will wall off this diseased area from the healthy lung. Thus far, then, his disease has fortunately become arrested; possibly he has about this time come upon a healer, to whose alleged power of working miracles he has perhaps attributed his restoration to health. We know further that very important factors in the cure of consumption are fresh air and sunshine, good digestion and healthful regimen generally; although these are by no means all that is essential to the cure they oftentimes suffice to arrest the tuberculous processes. Presently, however, other tubercles in other parts of the lung are likely to undergo inflammation, with a recurrence of the accompanying symptoms. Several contiguous tubercles become inflamed and break down together; in their coalescence, ulceration, softening and liquefaction will result a large cavity; an advanced and incurable stage has then been reached. Thus does this disease proceed by advances more extended, alternating with briefer stages of improvement. Often, under a wise therapeusis, is recovery assured.

(The State sanatorium at Raybrook has a record of eighty-three per cent. of cures in incipient cases.) Too

often, through stupid or perverse advice, does the patient get by progressive stages, into a condition when death is inevitable. Consumption typifies to an unusual degree, the mournful results of the pernicious activity of faith-curists, who in their sacrilegious vanity claim supernatural powers. With equal vanity they exult in their ignorance of the inexorable processes of nature, as the student finds them in diseased conditions. They urge their victims to ignore the meaning of their cough, their fever and sweat, of the blood which they spit out; to laugh at the warnings which these symptoms give; to go about as if they were not ill; to trifle until it is too late, with the health of their bodies, the most precious of all possessions. It is nothing to these calloused and brutal "healers" that their victims, whom they know not how to educate, emit promiscuously the infective material of consumption, whereby the lives of the healthy are put in jeopardy.

XII. Healers claim that they can cure all imaginable diseases; it is essential to their success that they make no exceptions. But they have never cured surgical cases; they have never cured necrosis of bone. Mrs. Eddy declares that she has; but she offers no other proof than her mere uncorroborated assertion, which from a scientific point of view is considerable worse than worthless. Here is a specimen of her claims: "I challenge the world to disprove what I hereby declare. After my discovery of Christian Science I healed consumption in its last stages, that the M.Ds', by verdict of the stethoscope and the schools, declared incurable, the lungs being mostly consumed. I healed malignant tubercular diphtheria (whatever that may be; certainly no qualified physician has any knowledge of such a thing); and carious bones that could be dented by the finger, saving them when the surgeon's instruments were lying on the table ready for their amputation. I have healed at one visit a cancer that had so eaten the flesh of the neck as to expose the jugular vein so that it stood out like a cord." Language does not contain expressions adequate to characterize such falsehoods.

Faith curists have never restored a limb that has been lost, nor an eye that has been lost; they have never cured dementia or idiocy, which diseases are the result of abnormality in the structure of the brain. They have never restored sight in one born blind or hearing in one born deaf, when the inability to use these senses has been due to the congenital absence of the necessary organ. They have cured no case where sight or hearing has been restored by any other than surgical treatment. They have never cured by thought alone cancer, or Bright's disease, or locomotor ataxia. Their many assumptions to have done so are based either upon mistaken diagnoses; or their ignorance of diagnosis; or their claims are premeditated falsehoods.

XIII. Tumors, warts, and growths of all sorts are often said to disappear miraculously. Women sometimes have "phantom tumors" in the abdomen, which are subconsciously conjured up in the pathetic desire to be blessed with children. These phantom tumors disappear when the woman is made to comprehend that her hope is unfounded; or they are made to disappear under anaesthesia should the obsession persist. Many "benign tumors" are adjudged by the astute healer to be cancer; such are fat, or muscle or fibroid tumors. They are not necessarily harmful, except by their pressure effects, although such tumors may in time take on malignancy; they are removable only by operation.

And the warts of our childhood, where are they? They have disappeared with or without the aid of Hexen charms, or the "saying of words" or the faith curist's influence. They have dropped away of themselves, just as the apple does when it is ripe; there is nothing miraculous about such things as these.

XIV. Stigmata have often been exhibited by hysterical people. Religious exaltés have had blood spots appear on the hands and feet, in reverent imitation of the Saviour's wounds. These are hemorrhages in the skin resulting from the rupture of capillaries. They have come about through concentrated attention upon given parts of the body, in essentially the same way as in John Hunter's experience. There are diseases characterized by physical weakness, such as purpura, in which such hemorrhages in the skin are symptoms. There are patients who are able with little difficulty, to suck pure blood from their skin.

XV. In considering the claims of faith curists the layman is likely to ignore the frequent failures to cure which evidence the healer's impotence to the trained observer. The ancient philosopher was shown in a temple the votive tablets suspended by such as had escaped the perils of shipwreck: "but where," asked he, "are the portraits of those who have perished despite their vows?" The "royal touch" was supposed to be a never failing remedy for scrofula. During twenty years, in the reign of Charles II., that monarch touched no fewer than 92,000 people; nevertheless it seems that more died of scrofula during his reign than during any other equal period. Queen Anne touched Samuel Johnson for scrofula before his fifth year: nevertheless that wisest of men suffered throughout all his life from this disease. William, who with Mary occupied the throne, was asked to place his hands upon such a sufferer; he complied, adding to the ceremony, "and may God give you sense."

XVI. There cannot be any inherent healing virtue in the various material objects upon which the sick pin their faith; whenever patients feel better through their influence it must be by suggestion. Surely none would claim more than this for the different charms and amulets which the superstitious wear—the horse chestnut, the iron ring (which cures the rheumatism), coffin nails, bits of a hangman's rope, chips from a gallows, spiders suspended from the neck, pieces of dried toad suspended over the heart, and the like. Perkin's tractors, for instance, were originally made of metal; but it was presently found that if they were made of wood painted to look like metal, the effect upon the hysterical and the hypochondriacal was the same. And when the revered relics in the churches and shrines haply prove beneficial the relief must come about through the religious associations which these objects suggest, and the impressions which these associations make upon the minds of the sufferers—impressions which are effective in proportion to the intensity of the devotion that is felt, and the faith that is inspired. No one shall exceed me in appreciation of the potency which the symbol exerts upon the heart and upon human life; nevertheless, here, as in all things else, a true estimation is essential, else misfortune is inevitable, besides much time lost in seeking operative or other remedies which might prove effective.

XVII. All such cures as are supposed to be due to

the operation of occult agencies like mesmerism, magnetism, electro-biology, theosophy, Christian Science, and any number of like cults and methods are continually being achieved in the practice of medicine by the scientific use of suggestion and persuasion, and by wholesome education. The cures are permanent in so far as the patient's environment and his habits of life can be controlled. The roué who expected his physician to keep him in health despite his depravities and his sins against nature, died prematurely, a very much disappointed man.

XVIII. The personality of him who is treating the sick influences greatly the course and the outcome of the illness. This is at least as old a fact as Hippocrates, who observed that "he doth the best cures in whom most trust." This personal factor may act equally as well for evil as for good, as those who know anything about peculiar cults will agree. When a registered physician blunders inexcusably or commits malpractice, the laws are speedily and effectively applied to his punishment; in similar cases the quack and the charlatan have upon various assumptions, usually of a pseudo-religious nature, repeatedly gone unpunished. There is a sharp distinction between religious liberty and the license to commit in the name of religion, unlawful acts; but this distinction is by no means always made or appreciated. When a healer, for hire, accompanies to their last gasp a sufferer from typhoid fever or a little child with diphtheria, is he acting in a religious capacity?

XIX. Healers declare that they can cure by "absent treatment." (They are wont, oddly enough, to adopt this method when the case is one of contagious disease; strange what cowards they are in the presence of non-existent, immaterial germs. They are like those oleagenous saints who love to descant upon missionary obligations in the security of their comfortable drawing rooms.) There has been a great deal of research lately with regard to mental telepathy. It is upon popular impressions of supposed demonstrations of the existence of this force that the healer shrewdly based his claim. The possibility of supersensory transmission of thought has by no means been demonstrated, although most scientific investigations have of recent years been made by profound thinkers; the most that can at present be said concerning mental telegraphy is that thought is conditioned for its expression upon the material brain. Thought which is thus manifested is a form of energy; and it must conform to the physical laws which govern all kinds of energy. Mental power, like all kinds of power, must be disseminated in inverse ratio as the square of the distance. The possession of such power by the medical charlatan, if it could be proved, were indeed a miracle.

XX. Claims to have achieved miraculous cures invariably fall before scientific tests, whenever a scientific man gets the opportunity to investigate them. I have heard an eminent clergyman in a sermon reprobate the Faculty because they cavil at such allegations. "Such cures have been proved." They have never been anything of the sort; they have never been proved, and it is not now, nor has it ever been helpful either to humanity or to religion to say so. In many cases the test of time is not met. Many a patient, as in consumption, will feel better for a while; then a relapse of his illness and a retrogression will occur; many such relapses do occur. Such cases seem to be cures; but they are not cures.

"In my youth," writes Dr. S. Weir Mitchell, "we had mesmerism with its cures, then we had and have spiritualism with its like pretensions. From time to time we have had faith-cures. They come and they go, and have no stable life. The evil they do lives after them in the many mental wrecks they leave. When the charlatan Newton was ordering every class of the sick to get well, I was called upon to see case after case of the most calamitous results on mind and body. Now and then he had the luck to meet some one who was merely idea-sick—a class of cases we know well. Then he made a cure which would have been as easy to me as to him." (Was there ever so modest a man as Dr. Mitchell.) "I made much inquiry, but could never find a case of organic disease with distinct tissue changes which he had cured. A man with hopeless rheumatic alterations of joints was made to walk a few steps without crutches. This he did at sore cost of pain and then came to me to tell his tale with a new set of crutches, the healer having kept the old ones as evidence of the cure. And now we have the mind-cure, Christian Science and the like—a muddle of mystical statements, backed by a medley of the many half-examined facts, which show the influence of moral and mental states over certain forms of disorder. The rarity of these make them to be suspected. Hardly any have the solid basis of a thorough medical study, and we lose sight of them at the moment of cure, and learn nothing as to their future."

Many diseases are feigned, and sometimes most skilfully; even we doctors may be "taken in." The patient's testimony is like to be of little value; oftentimes it is most inaccurate. The inquirer concerning disease must rely upon subjective or objective symptoms, or upon both. Subjective symptoms are those which the patient tells, such as headache, or pains here and there. We must often accept such statements, which may be stated truthfully, in order to excite sympathy, or for various unworthy reasons. Objective symptoms are discovered by the physician for himself, as the condition of the lungs or the heart. And malingerers can most shrewdly simulate objective symptoms, such as the coated tongue, or temperature changes, or paralysis, or the gait of an ataxic. I have mentioned the tendency among hysterics to prevent the truth. Many people make their own diagnoses; or have ingenious friends volunteer in this capacity. Then upon such basis as this they state to others that they have had such and such a disease. The more dreadful the malady the greater will be the impression aroused, the greater sympathy. A gentlewoman will, in the best faith imaginable, declare in an "experience meeting" that she has had double pneumonia, of which her healer has cured her; this passes unquestioned as a miraculous cure of double pneumonia. When I asked this lady afterward how she knew she had had this grave disease, in this very grave form, she told me she knew, because "her nurse could tell at a glance she had pneumonia." No medical examination had been made. I asked what symptoms she had had—how she had suffered. She told me she had purposely forgotten—she had tried to dismiss from her mind all recollection of her distressing illness: Christian Science required the belief that such things were non-existent; anyway they were but

errors of mortal mind. All this is very well; but how are we to know then, if she had had anything more than an ordinary cold.

The condition of the patient with regard to his alleged cure is oftener than not magnified in the description of the illness. Many important facts are omitted, as the Rev. Dr. Bulkley found in a most interesting investigation. Sometimes these facts are not regarded as of consequence; sometimes they are omitted because the lustre of the supposed miraculous cure would be dimmed by their mention. And testimony to miraculous cures, like that famous snowball, increases, and becomes more wonderful the oftener it is told, the oftener it is enlarged upon; until whatever truth there may have been in the original tale has been lost in the mass of supplementary exaggeration. Moreover, the minds of witnesses and hearers are inflamed by a succession of such testimonials until the alleged miracles performed by any one cult soon number into the thousands. Practically, then, all such claims of miraculous cures are absolutely without weight, and are utterly unconvincing to any mind accustomed to the scientific investigation of disease—nay, to any mind at all which works in accordance with rational and logical processes.

And let him who remains unconvinced by the observations I have here submitted reflect that "the unexplained is not necessarily identical with the inexplicable, nor the inexplicable with the supernatural. Otherwise we should soon be overburdened with miracles." This might redound to the advantage of theology; but it would certainly be most unfortunate for religion—which in its essence stands for truth, for the dignity of the race and for sympathy with human suffering.

TEAM WORK BY CLERGYMEN AND PHYSICIANS.

BY J. MADISON TAYLOR, A.B., M.D., PHILADELPHIA, PA.

CO-OPERATION between clergymen and physicians to relieve such sufferers as apply at church meetings is capable of effecting endless good. This good is not due so much to the amelioration of psychoneuroses by suggestion (this can be done by hypnotists, Eddyites, metaphysical healers, New Thought movements, et al.) as by calling public attention to the paramount importance of organized intraprofessional co-operation. The American citizen is peculiarly irreverent, resentful of constituted authority, self-sufficient. Faults he recognizes, or assumes to exist in the methods, both of the church and of the medical profession. Hence pretenders are welcomed liberal of promises to do what is instinctively desired, usually in a form and manner flattering to individual vanity or freedom of action.

It is eminently desirable that these two professional bodies shall demonstrate the possession of larger powers of accomplishment than can be exhibited by irresponsible free-lances.

A benefit must ensue to the members of these professions if they can be thus induced to overhaul their customary methods; to revise their knowledge of practical psychology; to formulate working rules for dealing with the graver human problems. It is painful but salutory to confess that we all get into contentful ruts. Indeed, the burden of adverse comment from medical men is to the effect that to make all this pother is a mistake, it being better and more conservative to attend each one to his own business and leave the increase to the processes of quiet evolution. None the less there are many exceedingly important phases of psychopathy, whether depended upon structural damage or not, which call for fuller co-operation than each party, clerical or medical, are ordinarily willing to grant.

The "Emmanuel Movement," as Rev. Dr. Worcester calls his work, is unique in definite particulars. It will come in for criticism, even denunciation, but, if pursued consistently according to his original intent, cannot fail to accomplish much temporary and some permanent good results. It is no little reward for any evangelist or physician to effect immediate amelioration of moral or psychic obliquities. If the benefit can be carried on for months or years, it is so much clear gain. We of the medical profession are by no means able always to achieve full cures when psychoneurosis is the basis or a complication.

The clergyman, whatever his creed or form of belief, should be stimulated to face the ever obtrusive yet elusive problem of the "world-weary," the timid, discouraged ones, the vast horde of vacillators, whimperers, snarlers, railers, quitters. How many of us ourselves escape intermittent lapses into such pitiable states, for longer or shorter periods? The one thing we all need is to recognize our own frailties and train ourselves to overcome them. Frank conferences, such as the Emmanuel workers encourage, force upon our consciousness the need to recognize the genus and differentia. What serenity of power, what clarity of judgment, comes to those who themselves courageously assume the prerogative of counsellor, of healer! This personal exercise of helpfulness makes for strength, courage, confidence, power, accomplishment.

To the physician who himself thus patiently collabarates there is a boundless opportunity to see the naked hearts of men laid bare; to search the hidden springs of impulse. Nor could this be obtained by a lifetime of humdrum routine practicings or preachments. The student of human ailments is well rewarded who shall stand beside a master, whether physician or clergyman, in his concrete dealings with this most urgent and far-reaching of human problems.

Co-operation of the clergy with medical men in a well-definable field of usefulness is a vital necessity, an inevitable tendency of modern evolution.

The essential purpose of each of these great and varied professional bodies is to teach people to live wholesome lives. Each group, sect or individual, may well formulate for themselves certain rules, according to diverse processes of evolution, based on historical precedents and individual concepts of duty. The more these are reduced to primordial acceptable principles of conduct the better for those who exhibit the need for help.

While the common ground for action involves a clear knowledge of the principles of psychology, it is by no means necessary that the individual worker shall be a trained psychologist. It is far more necessary that he shall be moved by full sincerity of purpose, by humbleness of spirit and always fortified by the exhibition of common sense. The first quality or obligation is to become a close observer of consciousness in its multifarious and kaleidescopic variations.

Psychotherapy in one form or another is used by all leading minds in all lines of human endeavor. Hence we owe it to ourselves in any department of effort to

get clear, well-defined knowledge of the principles of our craft or calling, and apply them in our daily work, always keeping close to simple lines of presentation. Do clergymen or physicians follow this golden rule? Obviously they do not, or at any rate, not enough.

In order to teach others to live, to think, feel and act so that they may do the best possible, we must ourselves be at least aware of the main points of procedure involved and offer them with exactness and confidence for the solution of the problems at hand.

Imperiousness in manner will repel, will cause the troubled soul to close the doors of receptivity. Gentleness, sympathy, tact is needed to open the gateways, front or back, of the heart. Thus alone can we learn the facts, the fears, doubts, woes, whether large or small, real or fancied. Then we may counsel rest or action, to go on or go back, to revise or devise, to set the course which can or should be followed. To know and realize where we are and what we should do or are able to do, and set our course for the doing, is the half of success or health.

The very best good which clergymen or physicians can do for troubled souls is, to teach them not only what to do next, but how, when and where to do it. This is the realm of so-called common sense, yet it requires the uncommonest kind of sense, a large knowledge of the world, the flesh and the Devil to teach it judiciously.

It will be seen, then, that clergymen and physicians have need to know, to be practically familiar with, to have ample experience in, many confusing phases of everyday life entirely outside of their technical lines of training. To be ignorant in this department of world-evolution so limits the potentiality of all knowledge obtainable from science or literature as to make it less than half effectual.

How shall they get side-lights from the nether world, the "seamy side?" That is a large order. Some men can be, indeed, many are, soaked in the atmosphere of the slums; live like the man in "No. Five John Street," and yet learn little or nothing. I have been cruelly disappointed in some clergymen who have spent months or years in college settlement work. They had eyes and saw not, ears and heard not.

The man or woman, however, who sincerely desires to learn usually does. Not all are wise. There is no other way but to work among the submerged peoples in some capacity and make personal observation. It is a safe statement that no clergyman is fully equipped unless he spends some months in slum-work; just as no physician can be adequately trained to afford full helpfulness, no matter how much he may "walk the hospital," who does not actually mingle in the life of the poor and degenerate. Having thus learned humanity on the lower, simpler, unlovelier planes, the clergyman or the physician can qualify to deal with the concrete problems of life.

Furthermore, a great problem must be faced by both these learned professions. They have lost, and are steadily losing their potential, their justification for existence by reason of omissions of zeal in demonstrable and plainly expressed departments of duty. A large part of the remedy is to relentlessly revise their methods of dealing with the vaguely ailing, the vascillators, the "demi-fous," the "demi responsibles." The method needed is to reach out, get hold of these, and equip ourselves to afford practical succor.

Having then become equipped, and, confronted with the problem, investigated fully, formed our opinion, made our selection, decided on our method of application, there yet remains a great factor unsolved but vitally significant. This great factor, on which hangs the success or failure, is the personality of the patient. In short, it is, as Moxon says, not so much the kind of disease the patient has got as the kind of person the disease has got.

On a true concept of this pivotal factor depends all lasting usefulness. It is just here that the physician in too many instances falls down. Derangement of bodily function is one thing, and it is difficult enough at all times; our scientific knowledge of many essential things is still pitiably lacking. Individuals also vary widely in their knowledge and comprehension of what they have learned. It cannot be denied that many a physician is dolefully ignorant of much that he is supposed to know, provided in his curricula, presented aforetime to his intelligence, absorbed and assimilated only in part and now remembered or forgotten, from which he may wisely or clumsily apply skilfully or foolishly. Not only so, but there is wide diversity in belief as to suitability of measures, contrarieties in deductions, grave omissions in analysis and synthesis, in interpretation, etc.

It is quite another problem to assume the task of disentangling the complexities of psychic variants. Worse than all is the confusion induced by divergencies in early training, standards of belief, ethical contradictions, and the like. None the less here is where the physician may prove himself a man, and the clergyman (if he be so minded) a veritable superman. Neither can do so much alone as when supplemented by the other. Each has his sphere of action, difficult to fill, but they constantly overlap.

The physician who deals wisely with the inner man, his springs of action, the psyche in all its mysteries, will often get uniform results from whatever he may select of remedies ponderables, "potencies" or specifics, with very diverse agencies, provided he holds to the central thought and sincerely does his best.

The character of the daily work which the clergyman is called upon to do has in it overmuch of the element of emotion and too little of critical recognition and differentiation of abnormal impulse. Hence the need for him to be on guard against the overmastering effects of morbid or ill-considered sympathy. He needs to study and estimate the real needs of humanity, based upon a full recognition of mental variations, both constant and temporary. So large a part of these temporary, occasional, often accidental variants are due to physical derangements that he must of necessity be prepared to deal with them in the light of an adequate appreciation of the sliding scale of physical conditions. Hence it is plain that unless he acquires some fundamental knowledge, which can be learned only from the same sources and efforts that physicians do, he must make manifold mistakes. Indeed, it has often occurred to me to outline the facts with which all clergymen should become familiar. This should, however, include an acquaintance with psychologic abnormalities, peculiarities of the ego, especially that most interesting and practical field, the *"demi fous,"* which Grasset has so concisely presented.

Finally, clergymen stand in much peril from the adulation of their flocks. Over appreciation is capable

of making of a really wise man the close approximation of a fool. The habit of acting more as a social promoter than a robust shepherd or resourceful guide in strange paths, has proved the Waterloo of many an originally worthy "Pastor."

ANTHROPICAL PHALLIC PECULIARITIES.

BY C. C. MAPES, COVINGTON, KENTUCKY.

THERE are recorded in the literature many curious instances of abnormal or anomalous phallic development, likewise entire absence of the human penis has been repeatedly observed. At the outset the writer wishes to state he fully recognizes that examples of this kind are of interest only as lusus naturae, and lengthy descriptions including all minor details concerning such anomalies would be inexcusable; but it is hoped a brief account of some of the cases of anomalous development, absence of the penis, etc., which search of the literature brings to light, may at least possess sufficient interest to warrant publication and perusal. No further apology is offered for the presentation of this compilation.

While complete absence of the penis is an exceedingly rare anomaly, it has been observed occasionally in both ancient and modern times, as examination of medical records amply demonstrates. Schenck, Borellus, Bouteiller, Nelaton and many others have cited such instances. Revolat and Fedelis describe a newly born child whose external genitals were entirely absent, and there were present spina bifida and umbilical hernia. Nelaton records the case of a boy aged two years who had no penis, the testicles were found in the scrotum, and the child urinated through the rectum. Ashby and Wright mention complete absence of the penis, the urethra opening at the margin of the anus outside the external sphincter muscle, the scrotum and testicles being well developed.

Murphy describes an instance in an infant where the urine was voided through an opening just above the normal location of the penis, the scrotum was present. An incision was made into a small swelling just below the urinary opening, which brought into view the penis, the glans being normal but the body very small. Demarquay quotes a similar case.

Goschler (Jacobson) speaks of a well developed man aged twenty-two with abundant hair on his chin and suprapubic region, scrotum normal with median raphe, but careful search failed to reveal any trace of the penis. On the anterior wall of the rectum a short distance above the anus was a large opening through which urine was voided. Right testicle and cord normal, acute orchitis on left side. Just in front of the anal orifice, continuous with the raphe, was a fold of integument one and a half inches long and three-fourth inch wide of erectile tissue which swelled under excitement, the enlargement persisting several minutes, with usually a seminal emission from the rectum. Renauldin describes a man with a small penis and enormous mammae.

Atkinson cites a case of congenital absence of the glans penis in a man aged about forty years. Diagnosis had been made of adherent prepuce, but careful examination revealed the true character of the malformation. The root and body were normally formed, and of about the usual diameter and length, the corpora cavernosa and corpus spongiosum ended together in a nicely rounded and slightly pointed "stump," the prepuce was rather long, but the internal layer did not resemble normal mucous membrane except for a distance of about an eighth of an inch from its juncture with the urethral mucous membrane. The urethra was curved forward along the end of the penis, terminating in a round meatus near the center of the end of the organ. The patient sought relief (1) believing he only had an abnormally long prepuce adherent to the entire glans preventing the passage of a full stream of urine, and (2) because he did not seem to enjoy the same pleasurable sensations in coition that he imagined other men did!

Harris describes a case of congenital absence of the penis. When stripped the patient was observed to have no trace of a penis, the pubic hair was abundant extending upward in a point toward the umbilicus, he had no hernia, testicles well developed, scrotum short, its raphe being quite conspicuous. The right testicle was a little larger than the left, and the left hung lower than the right, no trace of varicocele. The anus and perineum were quite hairy, the anus small and tight, sphincter well developed, just in front of it the perineum was thrown up into a narrow, oval, sensitive ridge more than an inch in length, which ended at the anus, and was attached to its periphery. At the end of this ridge, looking backward, was seen the orifice of the urethra, which was found too sensitive and contracted to permit the passage of a sound or probe and the distance to the bladder could not therefore be determined, but it was probably less than an inch and a half. The urine was not discharged freely as there was some obstruction in the canal, and the seminal fluid was less in quantity than normal when evacuated under sexual excitement. The oval body in the perineum was tender to the touch, and particularly so to the pressure of the horn of a bicycle saddle. The tissue was not erectile in its composition.

The young man urinated at intervals of a few hours, but could retain his urine seven hours when in bed. The sensation of a desire to urinate was at the orifice of the urethra. The ridge of the perineum somewhat resembled an enlarged clitoris, pinched in the cleft between the nates, and projected below and slightly over the sphincter. The mucous lining of the rectum and urethra were not continuous. The man urinated and defecated independently, the fecal passages being smaller in diameter than normal. It is said that his tastes were for the opposite sex, and that he was fond of the society of young women!

Mathews cites the case of a gentleman aged thirty years brought to him from a northern state to be operated upon for hemorrhoids. The man was married, and his young wife accompanied him. Upon making a careful examination it was found that he had no penis and stated that he was born without one, and that the urethra opened into the rectum about an inch above the sphincter muscle, conse-

quently he had urinated through the rectum from birth. His testicles were large, prostate small and not well defined.

There are a number of the older writers who mention deficiency or absence of the penis, e. g., Bartholinus, Bauhinus, Cattierus, the Ephemerides, Frank, Panoroli, van der Wiel, and many others.

Numerous examples of rudimentary development of the penis have been recorded, the majority of them complicated with cryptorchism or other abnormality of the sexual apparatus. In many cases the organ is present, but the infantile type persists throughout life. Kaufman cites the case of a boy aged twelve years whose penis was but three-fourth of an inch long, the thickness of a goose quill, and feeling as limp as a mere tube of skin, the corpora cavernosa not entirely absent. The testicles were found at the entrance of the inguinal canal, the glans penis only slightly developed, no evidence of prostate gland.

Binet speaks of a man of fifty-three whose external genitals were the size of those of a boy of nine, penis about the size of little finger and contained on each side a testicle not larger than a pea, prostate and seminal vesicles primitive, no hair on face or pubes. Wilson gives an instance in a man of twenty-six whose penis and testicles were no larger than those of a normal child at eight years. There are three cases recorded in the older literature of penises extremely primitive in development, quoted by the Ephemerides, Plater, Schenck and Zacchias.

On the other hand, there are instances on record where the penis was so large as to preclude coitus, even being a source of inconvenience to its possessor, measuring as much as ten or more inches in length. Extraordinary cases of large penis are reported by Albinus, Bartholinus, Paullini, Peyer, Plater and many others. Enormous penis of the newborn has been observed by Wolff and several others.

Penis palme, or the condition in which there is a single cutaneous envelope for both the testicles and the penis, is an extremely rare anomaly, only a few such cases having been recorded. Chretien cites an instance in a man of twenty-five, and similar examples are recorded by Schrumpf and Petit.

More recently Dugan reported before the Louisville (Kentucky) Clinical Society the case of a man who during childhood had been thought to be a female and whose companions had always been girls. The true sex, as frequently happens, was discovered by accident when an examination was made because of some trouble remotely referred to the genital apparatus. There was on casual inspection no external evidence of a penis, but more careful investigation disclosed the presence of a well defined male organ within the scrotum along with the testes. The scrotum was poorly developed, but a small testicle could be detected on each side just over where the female labia would normally be, and between these was located a fairly well developed penile appendage. The penis was positively demonstrated within the scrotum by erections which took place. When the organ became erect it lifted the scrotal wall, the phenomenon being similar to that which occurs when a finger is inserted into an empty sac and then extended. The man practiced sexual intercourse by taking the female on his lap and introducing this covered penis between the labia the convexity upward. Along the course of the penis, on lifting up the scrotum ,were found two small openings some distance apart, one apparently near the end of the penis which somewhat resembled a meatus urinarius; but this proved to be a blind pouch. The other located about the middle of the penis was smaller, but through it the urine was voided, likewise it furnished exit for the semen.

In this case it was proposed to make an incision in the scrotum, liberate the penis, unite the cut scrotal walls, make a cutaneous covering for the penis if need be by skin grafting, and performing such other plastic operations as might be necessary. However, the writer is uninformed as to whether or not surgery was ever invoked in the hope of benefiting the abnormal condition present. Such an operation has been successfully performed by Nelaton and one or two others.

Several cases of duplicate penis are reported in the literature. Taylor quotes description of a monster exhibited in London with two distinct penises, but with only one testicle on each side. It is said that he could exercise the function of either organ. Schenck, Scheurig, Bartholinus and others record instances of diaphallic terata; Ollsner mentions the case of a soldier aged twenty-two who had a double penis, urine being voided from the left meatus, but the man was incapable of normal coitus!

Valetini cites an instance in a boy of four years where two penises were superimposed, and Bucchettoni speaks of a man with two penises placed side by side. There is a case described of a man aged ninety-three with a penis which for more than half its length was divided into two distinct members, the right larger than the left. From the middle of the penis to the symphysis only the lower wall of the urethra was split. Jenisch describes an infant who had two penises, the right of normal size, the left larger, but without prepuce, each penis having its own urethra. There was also a duplicate scrotum but only two testiclees.

Gore (Velpeau) has seen an infant with two penises and three lower extremities. The scrotum was divided but only two testes were present. Each penis was provided with a urethra, urine being discharged from both. In a similar case described by St. Hillaire urine and semen escaped sometimes from one urethra and sometimes from both. The famous case of Jean Baptista dos Santos is doubtless familiar to all those who read medical literature. He had a perfect double functionating penis, either of which could be used at will!

Van Buren and Keyes describe the case of a man aged forty-two who had two distinct penises, the meatus of the left being imperforate, the right normal. Both penises became erect simultaneously, but the right was more vigorous. Sangalli speaks of a man of thirty-five who had a supernumerary penis which was capable of erection. Smith mentions a case in which a man had two penises and two bladders. Taraffi (Ballantyne) observed a child who had two penises, each having a urethra. There were two testicles on the right side, one on the left. The

child also had two anal orifices. There is one other similar case mentioned in the literature.

Cole speaks of a child having a double penis, the urethra bifurcated at the perineum sending a branch to each organ, urine was voided from each meatus, two raphes divided the scrotum into three compartments each of which contained a testicle. Lange cites an instance similar to the foregoing, in which there was also a duplicate bladder.

Ballantyne and Skirving (1895) reviewed all available literature and after eliminating all questionable reports tabulated and described a total of twenty cases of duplicate penis. The following are their conclusions:

(1) Diaphallus, or duplication of the penis in an otherwise apparently single individual, is a very rare anomaly, records of only twenty cases having been found in a fairly exhaustive search through teratologic literature. As a distinct and well authenticated type it has only quite recently been recognized by teratologists.

(2) It does not of itself interfere with intrauterine or extrauterine life; but the associated anomalies (e. g., atresia ani) may be sources of danger. If not noticed at birth, it is not usually discovered until adult life, and even then the discovery is commonly accidental.

(3) With regard to the functions of the pelvic viscera, urine may be passed by both penises, by one only, or by neither. In the last instance it finds exit by an aperture in the perineum. There is reason to believe that semen may be passed in the same way; but in most of the recorded cases there has been sterility, if not inability to perform the sexual act.

(4) All the degrees of duplication have been met with, from a fissure of the glans penis to the presence of two distinct penises inserted at some distance from each other in the inguinal regions.

(5) The two penises are usually somewhat defective as regards prepuce, urethra, etc.; they may lie side by side, or more rarely may be situated anteroposteriorly; they may be equal in size, or less commonly one is distinctly larger than the other; and one or both may be perforate or imperforate.

(6) The scrotum may be normal or split; the testicles, commonly two in number, may be normal or atrophic, descended or undescended; the prostate may be normal or imperfectly developed, as may also the vasa deferentia and vesiculae seminales.

(7) The commonly associated defects are: More or less completely septate bladder, atresia ani, or more rarely double anus, double urethra, increased breadth of the bony pelvis with defect of the symphysis pubis, and possibly duplication of the lower end of the spine, and hernia of some of the abdominal contents into a perineal pouch. Much more rarely, duplication of the heart, lungs, stomach and kidneys has been noted, and the lower limbs may be shorter than normal.

Bowe records the curious case of a farmer twenty-seven years old who had always enjoyed good health, but since puberty had been embarrassed by the following rare condition. Although possessed of intense sexual desire, with erections firm, persistent and complete, he had never ejaculated even a single drop of semen, nor had he ever experienced a sexual orgasm. The sensation during coitus was that of approaching ejaculation and emission, but the climax was never reached, nor did he experience the phenomena incident to the completed sexual act.

The author considered this not a functional but an organic disorder, due to occlusion of the ejaculatory duct near its urethral orifice. His reasons for this diagnosis were the sensations experienced during coitus, the feeling of approaching ejaculation and orgasm being the same as in the normal sexual act. The phenomena of ejaculation, he claimed, began in the testes and progressed along the vasa deferentia, hence there occurred the sensation that accompanied normal coitus; but as the seminal fluid never escaped into the urethra, the reactive phenomena of the completed sexual act were not manifest. It was probably the resorbtion of so highly a vitalizing secretion as the seminal fluid which was responsible for the excellent condition of the patient's general health, and his persistent sexual stamina. This state of things, the author believed, might occur as a sequal of gonorrhea, but as a congenital condition he was unable to find another similar case recorded in the literature.

There is recorded a most extraordinary case in which a metal ring remained buried in the penis for fourteen years. Leflaive observed the patient who complained of inability to micturate except by drops and accompanied by the most exquisite suffering. On being questioned he confessed that when a schoolboy twelve years old he passed his penis through a brass curtain ring, that the organ swelled considerably thereafter and the ring could not be withdrawn. Despite his suffering the boy kept the matter quiet. By degrees the ring "ate its way" through the skin into a circular groove, and the parts healed completely so that it was lost to sight, his suffering all the while being almost intolerable. Twelve years later the patient married, but during the first attempt at coitus the penis became greatly inflamed and contact was exceedingly painful. He bore valiantly with his infirmity for two years longer, but at last sought medical aid. When examined the prepuce and glans were found enormously swollen and presented a phlegmonous aspect. It was impossible to locate the meatus urinarius, and attempts at catheterization only increased the agony. About the middle of the penis was observed a circular white band representing a cicatrix, and at this point could be felt the ring embracing the cavernous bodies.

A longitudinal incision was made through the dense cicatricial tissue which gave issue to considerable pus, and at the bottom of the wound could be seen the ring. A director was passed under it, the foreign body being then cut through by means of bone forceps, and thus removed. No other similar case can be found in the literature.

Baumgarten alludes to the fact that luxation of the penis is one of the rarest but most important injuries of that organ, and cites a case in which such an accident happened at the ritual of circumcision in infancy, reduction of the luxation not being effected until eleven years later. The child's penis "disappeared" when he was undergoing circumcision at the hands of the constituted official. The primary diffi-

culty in micturition seems to have been promptly overcome, and when the child was six months old he was taken to a medical man who succeeded in bringing the glans penis into view, but it again disappeared and the father was counseled to wait until the child was older and the parts more fully developed. From time to time a swelling appeared on the right side of the scrotum, evidently marking the site of the luxated organ.

When seen by Baumgarten the penis was not visible. The scrotum was well developed. Between the mons pubis and the upper margin of the scrotum were observed a circular scar and rudimentary penal sheath, with a punctiform opening only admitting the smallest sized sound, which could not be introduced into the bladder. On palpation a cylindrical body could be felt beneath the skin between the scrotum and right thigh, the lower end of which was mobile and shaped like the glans penis. During urination a small swelling appeared in the same region, evidently an accessory pouch between the urethra and the external orifice mentioned.

In the operation performed to liberate the penis the pouch referred to was first laid open and the operator was then able to draw out the glans and neighboring part of the organ, the balance had to be detached by the knife owing to adhesions. The formation of a cutaneous covering to the exposed posterior part of the penis required a plastic operation, which was successfully accomplished.

The author describes the method pursued in the ritual of circumcision, and enumerates the accidents that have been known to follow it, but this was the first case known to him in which luxation of the penis occurred. He also reviews five other cases of luxatio penis which have been recorded, each due to severe injury, and in each an operation was performed to restore the organ to its normal site.

Guiteras mentions a man whose testicle had been dislocated as a result of his slipping in getting off a wagon, and the wheel passing up between his limbs. The testicle was found turned away from the epididymis and lying under the dartos. After making two incisions, one on the penis and the other on the scrotum over the globus major, reduction of the dislocation was effected.

For many of the data herein presented the writer is indebted to the admirable work of Gould & Pyle on the Anomalies and Curiosities in Medicine, the remainder have been collected and epitomized from various medical and surgical publications for the privilege of which he wishes to thank the authors and publishers.

Rattlesnake Poisoning.—C. S. White (J. A. M. A., May 8, 09) observes that if our therapeusis could be applied promptly in each case of snake bite poisoning the mortality (now from 25 to 40 per cent.) would be much lower. The venoms are particularly neutralized by ammonia and by potassium permanganate; but the best chemical antidote is two per cent. solution of the hyperchlorite of lime, which will immediately and surely destroy the venom by contact. When possible to apply the ligature proximal to the wound we have a means which controls the intake of venom, but endangers the mobility of the member so constricted.

GENERAL PERITONITIS FOLLOWING APPENDICITIS.*

BY NORMAN PHILIP GEIS, M.D., BROOKLYN, N. Y.
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THIS paper is based on a series of fifteen cases of general peritonitis following appendicitis, with recovery in every case. Eight of these cases were operated on by Dr. E. A. Parker, the remainder by myself. The treatment used was simple and there is nothing new about it. The Flower position and the Murphy treatment were used in all the cases.

By general peritonitis I mean a large quantity of free pus, with fibrin flakes, in the general peritoneal cavity. Intestines, red or bluish red, and the peritoneum thickened, red and angry looking. If the fluid is seropurulent I do not consider it in this class. This is not so grave a condition as when the cavity is filled with pus. No cases were refused operation, although in three of them I had little hope, considering them fatal with or without operation; they were given the chance by operation with surprising results. The operative time in these three cases was seven, eight and nine minutes respectively.

I have collected 246 cases of general peritonitis following appendicitis from the advocates of the sponging and irrigation treatment. The mortality in these cases was 26 per cent. The sponging method consists of dry sponging all the pus that can be gotten out of the peritoneal cavity. Wet sponging is done by wringing the sponge out of some solution, usually normal saline solution, and sponging the cavity. Gauze sponges are always used. The irrigation treatment is the flushing of the general peritoneal cavity with a large quantity of some solution through a good sized tube, the Chamberlain tube being usually used. This flow is kept up until the return fluid is clear. The tube is pushed into all parts of the cavity. The solution that has gained most favor is the normal saline; equal parts of peroxide of hydrogen and a watery solution of bicarbonate of soda is sometimes used first. After this the saline follows and is continued till the return is clear. Drainage is used. Fowler position and saline into the rectum has been general in their after treatment, yet with this treatment 64 out of 246 have died. This death rate is too great.

Following the Murphy treatment I found 104 cases with but four deaths. Adding these fifteen cases with no deaths makes 119 cases total, with a mortality percentage of three and one-third per cent. Murphy's cases numbered 48 of these with two deaths. He refused no one an operation.

The method used in all our cases followed very closely the Murphy treatment, which with a defense of the various steps, is as follows:

If the diagnosis of general peritonitis is made before operation, the McBurney gridiron incision is used. This incision is preferred because you do not have to make it over two inches long. I use the small incision for the reason that it prevents evisceration. When evisceration takes place in these septic patients it is very difficult to get the intestines back. Often it is impossible without enlarging the incision. These desperate cases give no time for pre-operative preparation, which

*Read before the Long Island Medical Society, May, 1908.

means gas in the intestine. The peritonitis also by disabling the bowels allows dilatation with this gas; this doubles the trouble. Therefore, keep your incisoin under two inches. It will close by itself through the action of the three lateral abdominal muscles, requires but two figure-eight silk worm gut sutures and permits of room for the drains that are needed. Also it is nearer the origin of the trouble. When the drains are removed the closing action of the three muscles make a firmer abdominal wall than any other incision that can be used with drainage. This incision is three times as safe as the rectus incision. Although the rectus is about as thick as the three lateral muscles together it is not as strong. The rectus acts only in one direction, while the three lateral ones act in three different directions. The liability to post-operative hernia is therefore greatly lessened. An incision which cuts the fibres of these three muscles should never be used. After you have entered the peritoneal cavity the pus wells up. I have seen it squirt up fully two inches above the skin surface. With two fingers begin an immediate search for the appendix. Break up all adhesions of the appendix and lower extremity of the cæcum, so that the former organ may be brought entirely out of the wound. Now pass a double catgut ligature through the clear space, in the meso-appendix, as close to the cæcum as possible. One ligature ties the appendix and the other the meso-appendix. Then the appendix ligature is tied about the meso-appendix and the meso-appendix ligature around the appendix. This gives double security to both. Clamp distal to the ligatures and use the cautery, letting it burn its way through. The carbolic-alcohol method is also good. Cut ligatures and let stump drop into the abdominal cavity. I do not in any of these septic cases invert the appendix stump, considering it a loss of valuable time, which means more ether and shock and lessening of the chance for recovery. Also each needle prick into the coats of the appendix, stump or cæcum opens an extra avenue of infection and increases the liability of fæcal fistula. It is impossible to take a purse string suture around the appendix or cæcum without one or more of the punctures going through all the coats of the bowel. Considering that there has been no pre-operative treatment, it is best not to try this purse string. Sometimes it is absolutely necessary to purse string the cæcum, but never do it unless forced to do it. The only measure taken to get rid of the pus is to make pressure over the abdominal wall on the opposite side and to turn the patient slightly on the right side. This permits some of the pus to run out and does not require more than fifteen seconds. I never sponge or irrigate.

It is a grave mistake to mop, irrigate or handle the intestines. Further, I believe that it is the cause of the high death rate of the cases cited above, following this line of treatment. It is absolutely unnecessary, as the incision into the peritoneum relieves the pressure. This is really the essential thing; it stops the absorption of pus. Pus under pressure is easily and freely absorbed, therefore relieving the pressure stops the absorption and mopping and irrigating is not only useless but highly dangerous. Two figure-eight silk worm gut sutures are used to close the upper half of the wound, the lower half is left for the drain. In all these cases the cigarette drain was used. One to the stump of the appendix and cæcum and one into the pelvis posterior to the bladder.

All agree that drainage is needed in these cases. Some use the glass tube. Rubber tubing is used either as a tube or is split from end to end and gauze laid in its cavity. Have used it both ways, but in the peritoneal cavity perfer the cigarette drain; it is softer and drains just as well and loosens quicker. In the female it is well at times to drain through the vagina. The posterior cul de sac incision is used as in the ordinary cul de sac operation. Here a rubber tube of extra large size gives the best results, with a small gauze drain added.

The after treatment is of great importance in these cases. The Fowler position was used in every case. This consists of raising the head of the bed twenty inches. Two pillows are used under the head and shoulders so as to make nearly a sitting position. A folded pillow under the knees adds to the patient's comfort and better maintains the position. This position is maintained from three to seven days, the length of time depending upon the temperature and general condition of the patient. When the temperature is normal two days in succession and other conditions warrant it, the head of the bed is lowered. The average number of days of the Fowler position in this list of cases has been five. The reason for this elevated head position is clear. The lymphatics of the diaphragmatic region are more numerous and larger than those of the pelvic area. The pelvic lymphatic glands, which are two iliac and sacral sets, receive the lymph vessels that drain the pelvis. They number from twenty to twenty-five and empty into the lumbar lymphatic glands. The abdominal lymphatics number close to 200 and their vessels drain the important viscera. Therefore, absorption from the pelvis is slower and less dangerous. In combination with the Fowler position the Murphy treatment is always used. In short, Murphy's full treatment is: Small incision, remove cause, drainage into the pelvis, sitting position of thirty-five degrees, from a pint to a quart of normal saline solution per rectum every two hours, elevating the bag eighteen inches only above the patient's rectum and only water by mouth for two days.

The first five sections of his treatment have been discussed. The solution always used is normal saline at a temperature of 100 to 105 degrees. A rectal tube was used with a fountain syringe, the bag not being elevated more than eighteen inches above the rectum, the saline being allowed to run into the rectum slowly. A good average is one drop a second. I have been in the habit of leaving the rectal tube in the rectum from twenty-four to forty-eight hours at a time. During all this time the solution is flowing the rectum retains the tube without difficulty. By leaving the tube in I believe there is less irritation than by removing it every two hours. The average amount of saline absorbed has been five to six quarts a day for two days. One severe case held and absorbed four gallons in two days. The act of the lymphatics absorbing this large amount of fluid keeps them so busy that they have not time to absorb the pus. What pus is absorbed is diluted with saline. The elimination under this saline treatment is wonderful. The amount of urine is greatly increased. The skin also takes part in this elimination, as is shown by its moist condition. As to the amount of saline to use, give all that the rectum will hold and the patient absorb. Dr. John O. Polak now uses the thermos bottle instead of the bag. This bottle will maintain the solution at the same temperature for twenty-four hours.

This is a great advance, for by this, constant hot solution does not have to be added to keep up the heat. Nothing but water is given by the mouth for two days. I give water freely, as much as the patient wants. Very often a full glass of cool water given at one time will stop vomiting. The first glass is usually vomited, but when repeated in an hour is held; all thereafter is retained. This also is a great help in the way of elimination. The drains I leave in till loosened by nature. This takes about five or six days. The dressings are changed over the drains every day. I do not irrigate the wound, the less over treatment a wound is given the quicker it will heal. If you make it a practice to remove the drain before nature is ready to discharge it, it is only a question of time when you will get secondary peritonitis for your trouble. I saw one case develop when the drain was removed on the third day, recovery, however, finally taking place. Another patient had the drain removed on the second day and two days later was dead from a secondary septic infection. Neither case was under my care.

As a complication we sometimes get a secondary abscess. This occurs in spite of drainage and cannot be foreseen. Fæcal fistula also follows these severe infections in a good number of the cases. Eight of the above cases developed it, but healed kindly.

SUMMARY.

1. Make a small incision.
2. Remove the cause if possible.
3. Do not sponge, irrigate or handle the viscera except the cæcum.
4. Drain the pelvis and stump.
5. Fowler position.
6. Murphy irrigation of the rectum and water by mouth freely.
7. Leave drain till loosened by nature.

1325 Pacific St.

CHLOROFORM AND ETHER ANAESTHESIA.*

BY WILLIAM T. DORAN, M.D., NEW YORK CITY.
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IN this short paper on Gas, Ether and Chloroform I will try to put forward what to my mind are the most important and practical points.

First, the gas ether sequence is the one most practical for general use. The patient should be given hypodermatically one-half hour before operation, 1/4 to 1/6 of a grain of morphine with 1/150 gr. of atropin.

This is not only given to lessen the amount of the anaesthetic required, and the shortening of the first stage of anaesthesia, but to overcome that element of fear that is nearly always present, and, to my mind, a marked contributing cause to the fatality which occurs during the first stage of the anaesthetic.

Having the patient in a quiet room it will be time well spent in taking a few minutes to get the patient's confidence and explain what you are about to do.

While giving the nitrous oxide gas you should talk to the patient until consciousness is lost.

Great care should be taken in switching from the gas to the ether, thereby preventing irritation to the larynx and coughing.

After surgical anaesthesia is established great care should be taken to maintain a light but even anaesthetic. Another important point in administering the closed method is to keep the bag well filled with air so that the patient will not be breathing from a vacuum.

As the close of the operation is approached, it is well many times to switch back to the nitrous oxide gas as the closing stitches are taken and by the time the operation is complete often the patient will be out of the anaesthetic.

Ether by Drop Method: In some patients where there is a great amount of bronchorrhea and cyanosis, it is much better to employ the drop method. It should always be preceded by a preliminary anaesthetic (as ethyl chloride or nitrous oxide gas) and then switch to the drop method. This will require the most careful attention to maintain an even anaesthetic, otherwise it becomes a pouring method instead of a drop method.

While this makes a very safe anaesthetic it does not replace, nor is it as safe as the gas ether sequence closed method.

Chloroforms In later years ether has replaced chloreform not only in this country, but abroad as a general anaesthetic, and very fortunately, for I believe that chloroform should never be used in this climate (the drop method cold). Whenever possible one of the safer anaesthetics should be substituted for chloroform. Nor is the man who is capable of giving a good ether anaesthetic equally successful with chloroform. Especially do I emphasize the counter-indication of the use of chloroform where there is any obstruction to respiration.

I would suggest, where chloroform is to be used by the ordinary drop method, that it can be made much safer, by employing two drop bottles, one kept in hot water (body temperature). This works well with the alcoholic and athletic patient. I oftentimes use in conjunction with this a few drops of ether now and then to act as a stimulant.

The so-called C. E. mixture I do not believe in, unless used in separate bottles.

Vapor Method: This method is very safe and pleasant to use in a limited number of cases, as in children and weak anaemic women. It is especially useful in mastoid operations where a profound anaesthesia is not demanded. A small per cent. of the vapor heated and especially if combined with oxygen places it in safety next to warm gas and oxygen which is the safest of all known anaesthetics.

I will conclude my paper with an earnest plea for a careful inquiry by the profession at large regarding this most important subject of anaesthesia.

356 Lexington avenue, New York City.

*Read before the Celtic Medical Society, New York, February 25, 1909.

Magnesium Sulphate in Tetanus. — McPherdon (The Canadian Journal of Medicine and Surgery) reports the successful treatment of a case of tetanus in a boy of thirteen with magnesium sulphate. Chloral and morphine were given for ten days with no result. Antitetanic serum was then tried, but the boy grew worse. On the twelfth day 2 c. c. of a 25 per cent. solution of magnesium sulphate were injected intra-spinally and 3 c. c. more the next morning. From then on there was improvement with final recovery. McPherdon says that Meltzer has reported eleven cases of tetanus treated by this method with six recoveries.

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THE INDIRECT INFLUENCE OF CERTAIN MODERN INVENTIONS ON GENERAL HEALTH.

IN this article we shall, purposely, allude to inventions whose direct effect upon disease is negative; we shall use these illustrations in a suggestive way for the sake of implying a similar influence by others; and we shall not stop to argue that anything which improves the individual psychic state or which uplifts social life in general has also an important influence on health in the narrow sense.

THE ELECTRIC STREET CAR. A good car service, urban and suburban, has a very direct influence on health, by enabling the population of a city to spread over an area adequate to provide an abundance of fresh air and to afford playgrounds—meaning to a large degree private grounds about isolated private houses—for children and adults. It also allows an equalization of the advantages of city and country life which were formerly quite distinct. Mere frequency of service is a factor of great importance in preventing the exposure due to long waits on a corner, even in eliminating the mental friction and profanity incident to the delay of a necessarily busy and time-pressed people.

In most cities, cars are now fairly well heated, clean and at least susceptible of ventillation. For the poorer classes especially, they save a great deal of fatigue in going to and from work and they render excursions into the country cheap and easy. Not only the direct benefits of fresh air and recreation are to be considered, but the competition with less desirable and more centrally located means of amusement of a less desirable nature, socially and hygienically. The mixing of all classes of society is not only desirable from the standpoint of democratic ideals but the advantages of cleanliness, the disfavor of unclean persons and even the desultory enforcement of ordinances against spitting are a lesson in certain forms of hygiene that, constantly repeated, cannot fail to produce a favorable influence on the home life.

The protection of street car employees by the partially closed platform, the regulation of hours of work, the provision in some cities of club rooms for use by employees waiting for runs and the insistance of discipline for the safety of passengers and pedestrians, afford standards whose extension to other industries would amount to an enormous elevation of the general standard of health as affected by industrial risks and those incurred by the average citizen on account of dangerous industries.

THE TELEPHONE. Every little while there occurs an instance of the value of promptness in summoning medical or surgical aid, for cases in which older and slower means would result in loss of life or aggravated conditions. Often, too, as in cases of gas poisoning, burglary, fire, etc., help is obtained when it could not have been obtained by any other means.

We wish, however, to emphasize the less obvious and direct effect of the telephone in simplifying social and business intercourse, in saving time, fatigue and often exposure and, especially in removing the unfavorable influence of isolation in the country.

THE PLAYER-PIANO. It may seem far-fetched to mention this instrument as having any effect upon health, especially as it is often abused to such a degree as to affect the mental equilibrium of unintentional hearers. Yet, to place within the reach of everyone of moderate means, the educational and cultural uplift of good music, to encourage mental recreation along such lines and to place a large proportion instead of a very limited one in a position to appreciate good concerts, detracts from the hold of objectionable shows and other means of passing leisure time. Only a small proportion of the population can master the intricacies of the piano or other musical instruments. The value of art in general and of music in particular, in dispelling grief, excitement and in affording a mental outlet for ennui which would otherwise lead to drink or other forms of dissipation or result in morbid introspection, has been established by many writers. It is scarcely an exaggeration to say that music has saved lives that would otherwise have been sacrificed to suicidal tendencies, that it has saved minds tortured almost to the point of insanity, that it has saved families. To magnify many times the availability of this influence, must mean a corresponding extension of its prophylactic and therapeutic value.

The typewriter, the elevator, the bicycle, even the automobile, the electric light, a host of other inventions, have rendered human labor more effective and, while tempting to greater effort have, in the main, shortened

the hours of labor and made it less fatiguing. At present, the world needs not so much new inventions as the perfection and cheapening of those already theoretically available. It is a safe general rule that any novelty which is, intrinsically or because of manipulation of rates, kept out of reach of the majority of fairly thrifty people, has failed to attain its proper influence on human civilization. It may also be stated that, however convenient and elegant, any invention which is not materially cheaper as well as better than the contrivance which it supplants, adds to the burden of the individual and makes life more laborious and, hence, more nerve-wearing and less healthy.

THE DEMAND FOR THE UNTRAINED NURSE.

IT is unnecessary to say that there are certain forms of disease and injury so severe that trained nursing is indispensable, even if the expense must be borne by charity, and that, on the other hand, the great majority of families cannot afford the services of a trained nurse in cases of ordinary severity, while the favored few will doubtless continue to employ trained nurses even for trivial conditions. What we intend in the present article is the discussion of the preference for untrained nurses in families of fair means, in which the direct expense is not the prime consideration. Our attention is frequently called to this matter and, practically always, the problem as it presents itself to the patient and his or her family, is expressed in the same general terms so that, while we shall use recent instances as texts, it cannot be said that they have determined the writing of this article or that they raise new issues.

It is estimated that only about ten per cent. of all families have incomes of $2,000 a year and over. Thus, the expenditure of half or more of the current earnings at this rate, in the sole direction of a nurse's salary, is a matter of economic importance which most thrifty persons will wish to save, if possible. Still, so far as our observation goes, the preference for the untrained nurse is usually based on arguments in which this factor is only indirectly apparent. Various social tendencies have rendered the problem of domestic labor increasingly difficult. Not only have servants' wages increased 100 per cent. in the last generation, but the amount of labor rendered by the average servant is less and the willingness of the servant to undertake various kinds of labor, has decreased. Along with other factors which have reduced the average size of the family, and with those which have tended to increase the cost of real estate, this has resulted in a great reduction in the available space in the home. In one family in which a nurse was needed, there was absolutely no bedroom available except in the attic; in another, relatives from out of town whose presence was desired and even needed, filled the last remaining room, and we have recently been a guest in a family, literally of a millionaire, in which the only guest room was a back parlor with a folding bed. In the case of families living in flats and hotels, there is commonly a dearth of spare rooms and, in the latter case, many invite guests only when a room happens to be vacant. Thus, in many instances, families of very comfortable circumstances, decide against a trained nurse, not from any lack of appreciation of her services and standing but because they respect her position too much to offer her undesirable quarters, especially if these imply the sharing of a room with a servant.

Very frequently families object to a trained nurse because of the extra work which she implies. It seems petty to count her laundry, a standing joke that she must have some one to wait on her for every detail not strictly within the scope of her profession, but these objections are repeatedly made by persons who are not niggardly and at a time when no one is disposed to jest, and by those who have had, as well as those who have not had, experience. In a recent case, the detail which seemed to turn the decision against a trained nurse was that, in a previous sickness the nurse had refused to dust the room, at a time when her duties were merely nominal and when the servants were all busy. And this occurred in a family unusually considerate of the rights and feelings of others and who certainly could not be accused of underestimating the dignity of the profession or of having any snobbish tendencies in this direction, since a member of it had married a trained nurse.

In the average family of limited but comfortable means the balance of work to be done and of hands to do it is easily upset, especially if the patient is the housewife or one who assists in any appreciable degree with the housework. Setting aside the nursing of the case, and any attention to dietetics, the mere fact that a member of the family is confined to bed overthrows the balance. Provided that the case does not require the use of hypodermics, catheters and other services for which special training is necessary, the emergency from the standpoint of the family is one of ordinary household labor rather than nursing. Indeed, both the patient and the family often prefer that the nursing in the old-fashioned, story book sense, should be performed by a near relative and some one who can leave the wife or mother free for such services is more in demand than some one to take care of the patient. In a recent case of considerable duration, in which a nurse was insisted upon, the wife continued to care for the case as before, and even to assist at medical operations, so that the sole service of the nurse was to administer a few hypodermics, which the wife herself could easily

have been taught to give. In retrospect, we were compelled to admit that instead of relieving the wife of care, we had simply added to it, as well as to the expense.

In conclusion, we wish to guard against the impression that we fail to recognize the necessity of the trained nurse for serious cases requiring careful detailed attention, that such work can be successfully carried out by other than gentlewomen, that the trained nurse should be expected to perform menial service or that the generality of trained nurses are disposed to make trouble by failing to make allowance for the need of prompt and willing service in an emergency. But we believe that there will exist a demand, by persons of moderate means, for nurses of the old type. This demand should be frankly recognized and should be met by provision for the partial training of servants to discharge the duties of nurse in cases of mild nature.

DARWIN AND NATURAL SELECTION.

THE centenary of the birth of Charles Darwin, and the fiftieth anniversary of the appearance of "The Origin of Species," has been appropriately celebrated throughout the scientific world; nor have workers in other fields, even the theological, been remiss in tributes to the memory of this revolutionizer in thought. The Cambridge University Press has very fittingly taken part in this memorial in the appearance of a volume having the double purpose of illustrating the far-reaching influence of Darwin's work on the progress of knowledge; and of exhibiting the present attitude of original investigators and thinkers toward the views embodied in this great man's writings. This book, indeed, is made up of twenty-eight papers by the most noted scientists of our era. The one among these to which we would here especially direct the attention of our readers is that on the much-mooted "Selection Theory" by Dr. Augustin Weisman, whose own contributions on this subject are in themselves most notable.

Weisman points out that however many and varied were Darwin's discoveries during the whole of a long and laborious life, none had so wide an influence on the thought and science of his generation as his theory of natural selection. Nor does Weisman believe that the theory of evolution would have made its way so easily and so rapidly after Darwin took it up if he had not been able to support it by a principle capable of solving in a simple manner the greatest riddle which living nature presents to us—that is, the purpose-iveness of every living form relatively to the conditions of its life and its marvellously exact adaptation to them. Weisman, for his part, repudiates the Lamarckian factors of the transmissibility of acquired characters and of the inheritable effect of use and disuse; but he accepts in its entirety Darwin's doctrine of natural selection. All adaptions, he declares, can be referred to natural selection; "the only point that remains doubtful is whether they all must be referred to it." However this may be, whether the Lamarckian principle is a factor that has co-operated with selection in evolution, or whether it is altogether fallacious, the fact remains that natural selection is the cause of a great part of the phyletic evolution of organisms on our earth.

Those who agree with Weisman in rejecting the Lamarckian principle regard selection as the only guiding factor in evolution, which creates what is new out of the transmissible variations, by ordering and arranging these, selecting them in relation to their number and size, as the architect does his building stones, so that a particular style must result. "But," continues Weisman, "the building stones themselves, the variations, have their basis in the influences which cause variation in those vital units which are handed on from one generation to another, whether, taken together, they form the whole organism (as in bacteria and other low forms of life), or only a germ substance, as in unicellular and multicellular organisms."

BLOOD TRANSFUSION.

FOR the benefit of those who imagine blood transfusion to be but a memory of another era we note here how frequently this means of saving and prolonging life and of preventing disease is being practiced in the present day. Campbell[1] predicts a brilliant future for transfusion; he has by this means been able to prevent the profound shock of severe surgical operations; and he sets forth the hope that in infectious diseases the blood of immune donors might establish immunity in afflicted recipients. This is altogether in accord with our modern and established theories of immunity as set forth by Ricketts in his work on *Infection, Immunity and Serum Therapy.*

Crile, of Cleveland, who has developed the alternative method of hypodermoclysis, prefers blood transfusion for extensive hemorrhages. Crile and Beebe first drained the blood of nine cancerous dogs and then transfused into their bodies the blood of dogs immune to cancer; in every case a cure of cancer was established. This would tend to establish the opinion of Ewing, Herlich, Bashford and others expert in cancer work that thousands of human beings recover spontaneously without suspecting that they have had cancer. Cassel has invented the method of suturing the blood vessels of donor and recipient so that clotting and

[1] N. Y. State Jour. Med., June, 1909.

other dangers attendant upon transfusion may be avoided. We have set forth[1] the method of Amling, by

[1] Medical Times, Sept., 1908, p. 277.

which the general practitioner may upon emergency do transfusion of blood.

A human donor—preferably the nearest blood relative, young and vigorous, thin with large arteries—is often difficult to get; so that the transfusion of blood from the lower animals is being considered. With regard to the establishment of immunity to cancer: the blood of animals is known to be neutral to human cancer; besides there is the tendency to the clotting on mixture of the blood of different species, with consequent embolism. But these difficulties are being combated, successfully, we hope, and—for the long run—make no doubt. Here again, we are harking back to old times. Denis in the seventeenth century successfully transfused the blood of lambs into his patients' veins; in 1894 De Domenicis reported transfusion from twenty-seven dogs to nineteen human beings. Hayem, Darenberg and others now encourage the hope that blood from any species may soon be made to re-establish health in human subjects.

THE DANGERS OF ANESTHESIA.

IN and throughout the vast majority of operations does occasion) the greatest anxiety is not the field the element which should require (and generally about the lesion involved, but the anesthesia; and it is a compliment indeed to our hospital juniors that this office is usually entrusted to them. Here (under the supervision, of course, of their superiors), they acquire skill and experience of the greatest possible value to them and benefit to their patients when they come into practice.

It is indeed a precarious position for the patient—to be from the first whiff until the word is given to "let up," hovering between life and death. We physicians realize this well enough—those of us who have ourselves been "cases" for operation; there is no more melancholy spectacle than the medical man who must himself get up on the table.

Nevertheless, in this country at least, the mortality from the anesthesia alone is very slight. Dr. J. Leonard Corning, who first showed the way to spinal anesthesia, considers the chances in these premises about equal to those of a cornice stone falling upon your head as you walk across the street. "The percentage is very small, about one fatal result in every 200,000 administrations. Yet death does occur, as we know, despite even all the care we can bestow upon the patient. Dr. E. R. Zemp, in the *New York Medical Journal,* considers, and rightly enough, that there is no method known that is entirely free of danger. Especially "beware of the anesthetist whose own peculiar method of administration has banished the hypodermic needle from the operating room and reduced the mortality from anesthesia to nothing! Eternal vigilance should be the watchword, and the minute (the moment, better) the least suspicious symptom arises the anesthetic should be suspended. Death may come suddenly. Alarming symptoms may come at any time." The danger signals are furnished by the respiration; watch any irregularity, cyanosis or pallidity. Examine the pupils unremittingly; their sudden dilatation without fluctuation is a grave sign; note the pulse—a weak, fast pulse is to be stimulated while the cone is temporarily removed from the nostrils. Even without any of these symptoms the patient may suddenly show signs of impending death!

We have given Dr. Corning's average mortality in America (which we make no doubt is correct). Dr. A. D. Walker, director of the physiological laboratory of the University of London, however, reports the number of deaths in England officially recorded as due to anesthetics, during the four successive decades from 1856 to 1905 to be 146—264—533 and 1.269. This is certainly a statement of most serious moment. "Add to this an unknown number of cases where danger has been incurred and an amount of anxiety the evil effects of which are incalculable, and we shall be constrained to admit that a most serious prima facie case exists for inquiry, and, it is to be hoped, remedy." Is this high comparative mortality over that in America due to the European preference for chloroform?

DRINK VERSUS FOOD.

THE question of alcoholism has lately been, and continues to be, much debated. Sometimes the contest is quite bitter, the extremes being represented by the prohibitionist, who is for "dry" communities—and those, who would have their towns go "wet" for the open sale of intoxicants. As in all human affairs the solution of this mighty problem must lie somewhere between these two extremes—in the golden mean. Moderation or temperance—such is the term—temperance in sentiment, in utterance, in appetite.

There is one phase of this question, not generally dwelt upon, to which we would here draw attention. This phase is well presented in Punch's delineation of two tramps: "Have you had any breakfast?" "No, not a drop." In the June *Cornhill Magazine* there are some "Leaves from the Diary of a Tramp"; and Stanley J. Weyman, the novelist, vouches for the truth of the statements contained in this paper. We find here a dreadful picture of England's unemployed. For example, a poor boy with a taste for books, is set at twelve

to work in a velvet mill; years later he experiences hard times and a "shut down"; then comes the long tramp, day in and day out, for new employment, until the last penny is spent; and finally, shoeless, hatless, sleepless, almost soulless, the end in a "doss house" alongside of reeking outlaws. "At Ulverton," states the writer, "I got a lift for a few miles on a mineral water wagon. We had not gone very far when the carter pulled up at an ale house, and invited me to 'have a pint.' I told him I was an abstainer, and he went in and left me to wait outside for his return. So I have found it all along: it is very easy to get beer, terribly hard to get food. Many men will say: 'Come and 'ave a drink,' who will never dream of saying: 'Come and 'ave a bite.'"

Then there is, of course, the scientific fact that alcohol destroys the sense of hunger and gives one the temporary and meritricious sense of satisfaction. It is the same with tea (the tipple of women); how many emaciated women among the very poor, find in the abominable and baneful tea kettle (kept constantly on the stove until a sort of ink results rather than tea) a surcease from hunger such as only food should satisfy.

It seems, moreover, that the vicious habit of "treating," which we presumed was a peculiarly American institution, is now in vogue also on the other side the pond. "Hell itself," observes the *Evening Post,* "could not devise a better soul-blasting arrangement than this 'treating,' which binds new misery on the miserable and turns prospective employers against them."

IMMIGRANT MIXTURES.

PROF. FRANZ BOAZ, of Columbia University, makes some observations,* which may well tend to clear the atmosphere, concerning immigrant mixtures; this notable contribution should do much to allay the fears of those who consider our present immigrant situation an unmixed evil.

It were indeed a practical impossibility to find a pure type of people anywhere; nor would any such phenomenon be precisely desirable. There is certainly no such pure type in any part of Europe; they were all "mongrelized" hundreds of years ago. In every European type we have historic proof of the process of mixture. The original immigrants in America were a product of this process, as are those who are still coming over. Nor need the continuation of the process in this country occasion alarm; racial and group antipathies are strong enough to prevent its attaining a rapidity greater than the intermixtures of the past, and, as these have never had a degrading effect upon European nationalities they should have no such effect here. The difference between present and past intermixtures is one mainly of the greater masses now involved.

Boas, therefore, would deprecate sensational predictions about group intermarriages in this country, especially since nothing is known very positively about their effects anywhere. The extreme differences between individuals within a type are greater than the average differences between two such divergent nationalities as the Scotch and Italian; here is a fact which increases the complexity of the problem. Again, it is not known (nor is it likely to be ascertained for a score of years) which racial types are the more fertile; or, consequently, which of the types will become physically preponderant among us. Nor do the census reports show to what extent each nationality tends to intermarry; we know now, however, that when the ratio of interminging is as one to nine there will be among the more numerous population "only 18 in 1,000 in the fourth generation that will be pure blood; and when true types intermarry with equal freedom less than one person in 10,000 in the fourth generation will be of pure descent." Upon such calculation the process of intermixture in these United States should be complete within a century.

Our scientists should now work for a Federal investigation into the facts about present racial intermarriage. As noted, the census does not at present help much in this regard. Congress should be urged—as it can do—to provide for the collection and incorporation of such data in the next census. We might then, upon some scientific basis, determine first the proportions of intermixture; the changes, favorable or unfavorable, in the physical development of the offspring; whether (as in the Argentine Republic) the proportions of the sexes alter, or, as in the case of half-breed Indians, a type taller than either parental race develops; whether the fertility of mixed blood is increased; whether the hybrid of distinct types tends to degenerate or (as is quite possible) to rise in the scale. Moreover, hardly anything has been determined by modern methods of research, regarding the American negroes. Here are problems, as Prof. Boas well says, which concern the welfare of millions of people; they surely need attention.

* Science, May 28, 1909.

Politics in Medicine.—We have heard of gentlemen in general literature who pay us a visit of a week or two and then on returning to their happy homes "across the pond," produce volumes of philosophic dissertation upon our national depravities. But now, it seems, the medicos are after us. Dr. P. Debloome, of Leyden, Holland, having attended the anti-tuberculosis congress in Washington, does not wait until he leaves us, but went off half-cock at Los Angeles, as follows: He criticized our Southern cities for "concealing epidemics and failing to enforce health laws, for fear of hurting business"; moreover, "doctors in America give altogether too much of their time to politics and the business of money-making; they should give more time to their profession."

BIBLIOGRAPHICAL

The American Illustrated Medical Dictionary. A new and complete dictionary of terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Nursing, and kindred branches; with new and elaborate tables and many handsome illustrations. Fifth Revised Edition. By W. A. Newman Dorland, M.D. Large octavo of 876 pages, with 2,000 new terms. Philadelphia and London: W. B. Saunders Company, 1909. Flexible leather, $4.50, net; indexed, $5.00, net.

This useful work is being kept thoroughly abreast the times by revision and extension. A special feature has been made of those words in the realm of biology which occur so frequently in the literature of physiology and pathology. Much new matter has been added covering the terminology of parasites, especially the protozoa; the B. N. A. anatomical terminology has been included, and the latest classification of the proteins has been adopted. The pictorial features of the book have proved most acceptable to users. In a work of this kind the latest edition is indispensable.

Exercise in Education and Medicine. By R. Tait McKenzie, A.B., M.D., Professor of Physical Education, and Director of the Department, University of Pennsylvania. Octavo of 406 pages, with 346 illustrations. Philadelphia and London: W. B. Saunders Company, 1909. Cloth, $3.50 net; half morocco, $5.00 net.

In these days of advanced physical culture, it becomes necessary that the subject be studied upon data from reliable sources, such as is found in this book.

Exercise has so many points of contact with education, it is so intricately related to mental, moral, and social training, each of which alone is so partial and incomplete, that the progressive educationalist is now compelled to study its bearing on all three.

It is of vital importance that the student of physical training should have a broad and catholic foundation on which to build the structure of his experience, and this can only be obtained by that full study of the subject afforded by works of this class.

This book can be commended with the greatest confidence, and would be useful for public libraries.

Children in Health and Disease; A Study of Child Life. By David Forsyth, M.D., D. Sc., Physician to the Evelina Hospital for Sick Children, etc., London, Eng. With frontispiece. Octavo, pp. 362 $3. Philadelphia: P. Blakiston's Son & Co. 1909.

There is no doubt that a book dealing with child-life from a scientific point of view is urgently demanded, and this the author has attempted to produce in this case. He has consistently borne in mind the greater importance of contrasting juvenile and adult qualities, than of pointing out their resemblances.

Many of the subjects will be found of equal importance to school boards, teachers, and other than medical readers.

It is an excellent book for its purpose.

Human Physiology. An Elementary Text-Book of Anatomy, Physiology and Hygiene. By John W. Ritchie, Professor of Biology, College of William and Mary, Virginia. Illustrated by Mary H. Wellman. 12mo., pp. 362. World Book Company, Yonkers, New York. 1909. Price 96 cents by mail.

This little book, one of the New World Science Series, is one of the best text-books on human physiology we have examined for the grammar school. It is readable, well written, and replete with practical hints and suggestions. The subjects of bacteria, sanitation, tobacco, alcohol, comparative physiology, etc., are presented in a simple, understandable manner. The effects of alcohol, scientifically stated, are based upon facts, not sentiment, and naturally argue in favor of total abstinence, as they could not otherwise do. The text is well illustrated. Health officers welcome this book for elementary schools.

Mental Medicine. Some Practical Suggestions from a Spiritual Standpoint. Five Conferences with Students at the Johns Hopkins Medical School. By Oliver Huckel, S.T.D., Graduate University of Pennsylvania, Pastor, Associate Congregational Church, Baltimore. With an introduction by Lewellys F. Barker, M.D., Professor of Medicine in Johns Hopkins University. Octavo, pp. 214. $1. New York: Thomas Y. Crowell & Co. 1909.

The author recognizes numerous attempts at closer co-operation between the physician and the minister in the processes of health and healing. He believes that the church should make haste slowly in the attempt at healing. He believes in a series of teaching along the lines of right thinking and right living. He aims to suggest a method of co-operation which can be readily used by all the churches, the fundamental teachings of mental science as used in modern psychotherapy. He would make the physician's work more effective by supplementing it with certain mental and spiritual factors, which religious teaching can often most helpfully supply. The book is well worth reading.

The Value of the Mixed Toxins of Erysipelas and Bacillus Prodigiosus in Inoperable Sarcoma. — Dr. Wm. B. Coley (Medical Record, Apr. 10, 1909) thought that this treatment was worthy of more careful consideration than had been heretofore given to it. If by giving certain bacterial toxins we could cause the degeneration and death of the sarcoma variety, it is only reasonable to suppose that by administering other forms of bacteria we could accomplish the same results with the other common variety, namely, carcinoma. The author laid particular stress on the well established clinical fact, that in a considerable number of cases of inoperable cancer of all varieties, particularly sarcoma, such new growths entirely disappeared under attacks of accidental erysipelas.

The mixed toxins fulfill the following indications: (1) In all cases of inoperable sarcoma, excepting the melanotic, which are probably of epithelial origin. (2) In cases of sarcoma originating in the long bones, in which operation means a sacrifice of limb. (3) Immediately after operation (within a week or two) in all primary inoperable cases, as a prophylactic against recurrence. (4) In addition to the foregoing, after primary operations for carcimona as a prophylactic against recurrence. This last indication offers the most important field of usefulness. In his own experience, there were less than 25 per cent. of recurrences in those cases in which the toxins were administered, whilst in those cases in which no toxins were given the recurrences were fully 75 per cent.

CORRESPONDENCE

THE QUALITY OF DRUGS.

To the Editor of the MEDICAL TIMES:

The medical journals give evidence that the revival of interest in drug therapeutics is becoming much in evidence. For a time it seemed that the development of non-drug therapeutic methods and the curious relapse into supernaturalism were likely to bring about the extinction of drug therapeutics, and the disappearance of these powerful weapons from our armories.

The revival has not come prematurely. It was high time we resumed the exercise of common sense. Just in proportion as we deserted the use of drugs the people deserted us. When it came to the application of suggestive methods, for which no knowledge of pathology was requisite, we possessed no superiority over the untrained, uneducated, volunteer practitioner. In point of fact, *he* enjoyed all the advantages, for his unprofessional way of looking at men and things, with the ignorance that hid from him the perils he and his patients ran, really gave him a handicap over us.

I repeat my conviction, that for nine-tenths of the ailments for which we are consulted, our best remedies are drugs, with correct hygiene; while as to the innumerable fashionable therapeutic methods nine-tenths of the people cannot afford them.

There are some considerations that should guide us in this return to drugs. It is a fair inference that if the old materia medica had been good enough, it would not have been abandoned. It was not satisfactory, and all efforts to fold the profession and the people back to it will surely fail. We must have a drug therapeusis that deserves faith before we can win faith for it. The uncertainty and inefficacy of the old remedies was the true reason for that depreciation into which drug therapy fell, and for the tendency of the profession to search in every direction for something better.

The alleged improvement in the quality of tinctures and extracts is not enough. I say "alleged," because we always knew we could secure good preparations if we took the pains. There is nothing in this line today any better than Squibb's were 25 years ago. Moreover, whatever may be the standard to which some pharmacists have brought some of their products, the quality we get when we prescribe is not yet uniformly excellent.

At the Section of Pharmacology of the A. M. A. meeting last year, Edmonds and Ross presented a paper giving the results of their physiologic assays of nitroglycerin, digitalin and ergot.

The result of their examinations of seventeen specimens of nitroglycerin tablets was satisfactory to them, since they found these tablets contained from seventeen to thirty-five per cent. of the strength attributed to them by their labels. Only two of the seventeen contained as much as one-third of the label strength. An important point developed was that there was no marked deterioration in the tablets due to their age. This confirms my observation that when a medicament is enveloped in sugar of milk, of which most tablets are composed, there is practically none of the decomposition which always goes on in fluid preparations.

The examination of digitalin tablets confirmed the clinical observations made by Beates, showing that the Germanic digitalin can be used in much larger doses than is usually supposed. This does not say that the smaller doses are devoid of activity. For the vast majority of uses to which this valuable glucoside is put, they are sufficient; but occasionally in the use of this remedy on the lines of dosage to effect, we are compelled to go very much beyond the minute dosage found in the alkaloidal granule. Beates worked up to doses of two grains each, in cases which required such dosage. He is far too skilful a therapeutist to recommend such doses as a rule, or when beginning the use of this remedy. Merck himself gives the dose at 1-10 to 1-2 grain, and this is quite enough for the common four-hour doses. For rapidly repeated small doses, a milligram repeated every half-hour is quite enough.

This Germanic digitalin is the only form of the medicament for which such dosage is applicable, since its action develops well within the half hour. Obviously it would be preposterous to use digitoxin in this manner, which has been said by Fraenkel to require sixty hours for the development of its effect.

The report on ergot is also significant. A wide variation was found in the strength of the preparations examined; and one that in February gave favorable results, three months afterward proved inactive, having deteriorated in that brief time. The discussion following this paper furnished abundant verification of the points it raised.

In view of these facts the movement favoring a return to official preparations is foredoomed to failure. There is nothing new to be said in favor of the galenics. They have been tried and found wanting by the profession, and the public demands something better. This, I firmly believe, is to be found only in the use of the active principles. These offer so many advantages that the physician is not wise who neglects to avail himself of them. The principal consideration that outweighs all others is that their action is uniform and the physician knows what will follow their administration. True, he may approximately foretell the action of the crude drugs—just so, a century ago men told the time of day pretty well by the sun, etc., but we use watches nowadays.

The active principles offer every desirable feature as a basis for a new drug therapy. Their use commends itself to every intelligent layman. "Medicine with the dirt left out," appeals at once and strongly. They possess the requisite novelty, they are easy to take, act quickly, are scarcely disagreeable to the taste or to the stomach, and their action has been ascertained so carefully that they may be directed, powerfully and unerringly, against the pathologic condition presented. Certainty, celerity and power in activities enable the physician to intervene promptly; so that whenever we find a physician who uses the alkaloids we find in him one who believes that acute maladies may be jugulated; and *vice versa*.

The only objection that has been raised against these remedies is the "commercial" one; but as long as the alkaloids are neither secret nor protected by any species of monopoly, this objection seems futile. True, their general adoption may be disturbing the interests concerned with the older preparations—but the question with us is of saving human lives and relieving human suffering; and incidentally to this, of regaining the confidence and support of the public.

Chicago, July, 1909. W. C. ABBOTT.

RETROSPECTIVE

The Presence of Tubercle Bacilli in the Circulating Blood in Tuberculosis.—The work which Dr. Randle C. Rosenberger has set forth (Am. Jour. Med. Sc., Feb., 1909), is manifestly of the very first importance. Rosenberger had previously declared that, considering the entrance of the tubercle bacilli into the human economy, the number of bacilli is not large, and they find their way to the blood and lymph stream; and during their transit some are discharged through the feces and others through the urine. This with the post-mortem finding of tubercle bacilli in 72.7 per cent. of the contents of 22 thoracic ducts, led to the belief that all forms of tuberculosis are characterized by a bacteremia. Rosenberger has sought to prove that tubercle bacilli are present in the blood in all tuberculous cases; and to determine if possible the presence of organisms in the so-called mixed infections in the late stages of this disease. Many have believed that the termination of cases of pulmonary tuberculosis is accompanied by infections of the pneumococcus, streptococcus pyogenes, staphylococcus, and the bacillus pneumoniae; but Rosenberger's observations in this regard have usually been negative; he has in a number of cases, even of tuberculous pneumonia, never obtained any other organism than the staphylococcus. Nor was the appearance of this latter considered as a possible infecting organism; but was usually looked upon as a contaminating organism from the skin. For the research here submitted Rosenberger has made up a list of cases; first, of those who were bedfast (the advanced cases with cavity formation); next, cases of acute miliary tuberculosis; and finally, incipients. And he has evolved the following technique: 5 c.c. of blood are withdrawn from a vein of the arm, and immediately placed in an equal quantity of a two per cent. solution of sodium citrate in normal salt solution; the mixture is then well shaken and placed in a refrigerator for twenty-four hours, at the end of which time there is an abundant sediment with the citrate solution slightly turbid. (Centrifugalization does not give good results.) A quantity of the sediment is then pipetted off, a thick preparation is made upon a new, clean, glass slide, dried upon a copper plate with moderate heat and then placed in distilled water until complete taking of the blood results. At this time only a delicate film remains; this is dried, fixed through a Bunsen flame, and then stained by the usual technique for tubercle bacilli. As a rule bacilli possessing the morphological and tinctorial properties of the tubercle bacilli can be demonstrated in the first slide thus prepared, although in several of Rosenberger's cases three slides were thoroughly searched before any bacilli were found; a negative result should not be announced until at least thirty minutes' careful searching of a slide. Before being used the pipettes are thoroughly washed in water, then placed in pure nitric acid, and after being used are again washed, this time in a solution of caustic soda, rinsed, and again placed in pure nitric acid until ready for use; no one pipette is used on two separate cases on the same day. On the pipettes are sterilized for one hour at 160 degrees C., and then placed before using in nitric acid. The syringes used for withdrawing the blood, as well as the needles, are boiled for twenty minutes before and after using in a solution of caustic soda; the needles are kept in equal parts of lysol and glycerine, and just before using are washed in sterile water. The glass piston, as well as the nozzle of the syringe, is anointed with glycerin to prevent undue adhesion. No special preparation of the patient's arm is necessary; lysol may be applied upon the area. Intimate mixing is essential, lest the blood clot; else great difficulty arises in demonstrating the organisms. The cases upon which the present paper was based numbered fifty (but up to January 15, 1909, Rosenberger has studied in all 125, detecting the tubercle bacillus in each one). Of the fifty cases first mentioned 5 were diagnosed as acute miliary tuberculosis; 2 as fibroid tuberculosis; 1 as pneumothorax; 15 as incipient tuberculosis; 23 as moderately advanced tuberculosis; and 3 as laryngeal tuberculosis; Rosenberger adds to these also the case of a tuberculous mother in which the blood from the umbilical cord of a placenta was examined. In every one of these cases he found tubercle bacilli—sometimes only a few, but mostly in large number, clumps of 30 to 40 being not unusual, especially in the cases of acute miliary tuberculosis. Morphologically most of the organisms were of normal size, though some were short and even clubbed; a very few long forms were also encountered. In one case the pneumococcus was seen; in several clumps of tubercle bacilli could be clearly observed in some of the leucocytes, indicating phagocytosis. In one patient tubercle bacilli were found in the feces on two different occasions; though physical examination did not detect the disease the organisms were nevertheless found in the blood; and about 2 c.c. of the citrated sediment were inoculated peritoneally into a guinea-pig, which died in about three weeks from an internal (peritoneal) hemorrhage. Its lungs were studded with tubercles, four of these were in the liver, and the spleen and mesenteric glands were enormously enlarged; spreads from the liver, spleen, kidney, heart's blood and mesenteric gland contained tubercle bacilli, but no other organism. In another patient, whose case was diagnosticated as acute miliary tuberculosis 2.5 c.c. of the citrated sediment was inoculated intraperitoneally into a guinea-pig, which, being sacrificed at the end of five weeks, presented upon autopsy four bronchial glands, in diameter from 0.5 to 1.5 cm., several enlarged mesenteric glands, splenic tuberculosis and only a few small tubercles in the lungs; spreads from the spleen, mesenteric glands and blood showed a few tubercle bacilli. It appears then to Rosenberger that tuberculosis in all its forms is a bacteremia. Even in healing or in "arrested" cases the tubercle bacilli are demonstrable in the blood, though usually in small numbers; in subjects dead of tuberculosis, if histological examinations of the liver, spleen and kidneys are made, microscopic scattered miliary tubercles will be found corroborative of this statement. Even in Rosenberger's small number of fifty cases the constant finding, especially in incipients, before the detection of the bacillus in the sputum, is decidedly valuable. It would appear, moreover, that the theory of mixed

infection late in the disease does not always hold, because, if tubercle bacilli are demonstrable by this method other organisms should be just as evident; yet in only one of the cases studied (that of a patient with a pleural effusion who really had incipient tuberculosis) was another organism (the pneumococcus) present.

Bald heads are becoming more numerous with the passing years. Will man eventually wear a white dome? Is the hair a useless excrescence and the vestige of a primitive existence when man needed some sort of covering to protect him from the cold and to mitigate his pain when he got "bumpedo"? We are told that the appendix and tonsils are only the relics of a cruder life, and that they are now only trouble-makers. In a popular magazine Dr. Woods Hutchinson recently gave an exhaustive and academic dissertation on heads and hair, with special reference to baldness. The article is very entertaining and readable, but when it comes to the matter of treatment, the Doctor shows the white feather and 'fesses up that about all we can do is to resort to prophylactic measures early in the game, thereby in a goodly measure preventing decadence of our natural thatch. Hair-restoratves are of little value aside from their odor and the slight degree of warmth and stimulation which they impart to the scalp. The writer states that these remedies are usually alcohol or ammonia incorporated with oils. The best hygienic procedure when we find our hair beginning to forsake us is the generous use of the brush. It is advised to employ two brushes in the manner of rubbing down a racehorse, although the efficacy of this double action may not be quite clear to some of us.

The causes of baldness are discussed from several different viewpoints. In a general way, baldness is due, as is frequently pointed out, to the fact that the periphery has the weakest circulation, and the nutritive process is therefore less active on the surface of the body. Hence as vitality begins to subside, there begins likewise a decadence of the hair, skin, nails, and usually the subcutaneous fat. The life of the hair is thought to very materially depend upon this cushion of fat beneath the skin, and from it the hair follicle derives its nourishment. If this subcutaneous fat is below par in vitality or has atrophied away so that the scalp fits down tightly over the skull, there is little hope of a restoration of the hair. Massage and hygiene are thought to be the only measures of much real value in attempting to get back a pate-covering or prevent what one has from parting company with its owner after once it has shown marked signs of such leave-taking. While massage and hygiene are given conspicuous mention in the treatment of baldness or near-baldness, yet the same writer here takes occasion to checkmate undue optimism on the part of white-domed readers by calling attention to the luxuriant hirsute growths in savages who are not acquainted with hygienic things. The Indian takes great pride in his long dirty locks, and rubs it with oil to make it slick, often applying dirt or ashes to relieve the itching—but he is careful to avoid such civilizing innovations as soap and water and hair-brushes. Still his hair seems to stay with him better than it does with his brother of the pale face and much civilization. Going barehead is not thought to help matters any when the hair shows signs of going glimmering, and too much wind and sunshine is calculated to do more harm than good. The writer asserts that hard hats with tight bands are not instrumental in producing baldness, since they do not compress the arteries which supply the hair. Brain-workers are popularly supposed to be more inclined to baldness, but this is regarded only as a pleasing delusion which the average man hugs as a sort of consolation. Baldness is protean, and is not limited to professions or stations in life. Laborers and the most commonplace people are as likely to be bald as the opulent and men of the greatest force of character. The latter individuals are naturally more conspicuous, and they are the people who most often apply for treatment.

Dr. Hutchinson states that it is a very difficult matter to classify baldness or get statistics and figures on the subject even approximately correct, since the majority of bald men never apply for advice or treatment. Tentatively and in a humorous way the doctor says bald heads may be divided in three classes so far as a hope of restoration of the hair is concerned, and after the old manner of classifying skin diseases. The latter embraced one-third of skin diseases which sulphur would cure, one-third which tar would cure, and one-third which the devil himself could not cure. The cases of baldness which will respond to treatment must be those in the early stages of falling hair and those following acute and infectious diseases.

It is a puzzling problem to frame up a tangible and believable cause for such a protean condition as we find in the baldness of men to-day; this in view of the fact that women are almost exempt from it. There are a hundred bald men to one bald woman. In fact, it is almost a cosmetic tragedy for a woman to have lost this her crowning glory. There must be a reason for this disparity in regard to the head-covering in the two sexes. Woman's and man's anatomical structure and nervous and vasomotor functions are not so essentially different that we could look for light on the matter from this point of view. I wonder if the constant cutting of the hair which always necessitates a strong draw upon the sebaceous fluids and nervous elements of the hair could have a devitalizing effect upon the hair structure? I believe that stiff hats that are nearly impervious may be a factor of causation. An unusual warmth, moisture and secretion are produced, and this may overstimulate the sebaceous glands which supply the hair. This extra sebum becomes dried, and produces what is colloquially termed dandruff. Dandruff is always a precursor of falling hair by reason of the fact that the hair is being deprived of a fluid that should nourish and sustain it. In time the hair-follicle dies because the sebaceous gland that supplies it has become inhibited in its useful function, and when the follicle is dead no power on earth could make another hair grow there. It seems to me to be possible for improper headwear to at least be one of the causative factors of baldness.

Convulsions in children always create consternation, and usually arouse the whole neighborhood.

Next to a fire there is nothing so exciting as a child in a spasm. The first thing the physician does on arriving is to endeavor to settle the cyclonic atmosphere about him. This he can best accomplish by doing nothing for a minute or two, and by doing it slowly. In perhaps half these calls to children the spasm will have been broken by the time the physician arrives. The efficacy of the warm bath and hot pack seems to be recognized even by the laity the world over. Inhalations of chloroform may in severe cases help to break the spasm. If the trouble is thought to be of intestinal origin an enema is then always indicated. Small doses of calomel and rhubarb followed by castor oil will almost invariably do good, no matter what the etiology. Nothing seems so well to discourage a recurrence of the convulsions as a clear gastro-intestinal tract. Small doses of chloral and bromide of potassium will also help to restore poise to the nerve centers, and prevent a renewal of the spasms. This has special reference to convulsions of reflex origin. If the weakness centers about the central nervous system recurrences may come early and often. Often the convulsions of infancy and childhood have a good deal of analogy to epilepsy and other unstable conditions of the nervous system. It may be only a precursor of one among many neuroses which beset more mature life. Rickets and other constitutional diseases may be at fault. Meningeal inflammations and many acute ailments are ushered in by convulsions. In spasms accompanied by fever and hyperemia of the brain the ice-bag to the head is serviceable. If, however, the circulation is weak, and there is evidence of anemia of the brain, warm applications would be more likely to meet the indication.

The diagnosis of syphilis ought to be an easy matter, but not infrequently physicians jump at conclusions when a lesion appears on the penis, and do not wait sufficient length of time for the disease to manifest itself. The patient is often put on the routine syphilitic treatment when there was nothing but a chanchroidal sore on which to base the medication. After he has been on the time-honored treatment for a few days or weeks all symptoms are so thoroughly masked that it may be impossible to tell whether the patient has syphilis or not. It is next to impossible to diagnose unerringly from the primary sore. It may be a chancre or a chancroid. The one may come too soon or the other be delayed. If a period of secondary incubation follows a sore along with the characteristic skin eruption a diagnosis of syphilis may be reasonably made. It is one disease of serious import in which a hasty diagnosis is not imperative. Time will clear it up. Of course there should not be such delay as will in any way jeopardize the patient or prolong his recovery. However, he should not be doomed to a period of drugging if there be not clear indications for so doing. Even tuberculosis is sometimes mistaken for syphilis, and by presumably able physicians. A man with a specialty if he is not a broad and scholarly person is especially inclined to see things from the angle of that specialty. I will here record a little experience. Was called in one evening to see a middle-aged, emaciated, distressed man who was suffering from a sore throat to such an extent as to almost preclude the taking of any nourishment. Only liquids could be swallowed, and even they with the most excruciating pain. The examination was brief and casual in this instance because of the clinical history of the case given, which was as follows: The man had for about three months been treated by as many different physicians, each in turn, and all had concurred in the diagnosis that he had syphilis. These medical men had special training and enjoyed a good reputation for their skill, so who would have tried to upset the diagnosis of the three? Each had cauterized the throat thoroughly, although each treatment aggravated the condition very much. Vigorous anti-syphilitic treatment was given. The patient grew steadily worse in every way. The blennorrhagic remedies could not be tolerated. The man would not continue treatment longer. The writer did not for a moment question the diagnosis of the men who had treated this patient, but as he was called more to temporize with the case than to treat it properly he decided to do this tentatively and without haste. A cocaine and menthol spray was prescribed with the hope that the anesthesia thus produced might enable the man to eat, and it was thought that a brief respite from drugging might be of some avail. I was not called back for two weeks. In the meantime I had told some of the friends that this man was not going to die, or at least not soon, and that he would perhaps get well. Syphilis does not kill outright, you know. When I made this return call the man was dying. I made a little inquiry into the case according to my own judgment, and untrammeled by the opinions of others. I then went out and gave myself a good kicking, metaphorically. It would have done more good if some lusty fellow could have done it for me literally, and done it vigorously. It was now as plain as the nasal appendage on the middle of your map. The man simply had tuberculosis, with the usual laryngeal trouble which we all see so often. No layman ought to have made this mistake. The moral to this is to do some of your own thinking.

The Treatment of Anemia in Infancy With Citrate of Iron Administered Subcutaneously.—Dr. John Lovett Morse (J. A. M. A., July 10, 1909) reports five cases of anemia occurring in infants under twenty months treated with citrate of iron given subcutaneously. The hemoglobin in all cases was below forty per cent., and in one case reached as low as twenty per cent. There was a marked diminution in the number of red blood cells, whilst there was an increase in the number of white blood cells. All cases made rapid improvement.

An aqueous solution of the citrate of iron was used, this being a very serviceable form. This can be put up in pearls and sterilized, each pearl containing a single dose. When prepared in this way it remains sterile indefinitely. This solution is absolutely non-irritating and is never followed by induration or abscess if the injection is properly given. A glass syringe with asbestos packing, which can be sterilized, is necessary. The needle must be of platinum, as the solution corrodes the ordinary steel needle. The average dose during infancy is 3-4 of a grain every other day.

In conclusion, Dr. Morse thinks the subcutaneous of iron is especially indicated in severe cases of secondary anemia with disturbance of digestion and in those of the chlorotic type.

Leprosy.—Dr. L. Duncan Bulkley (Med. Record, July 10, 1909) thinks that there is no reason for the great dread of this disease. The leper has been considered as "unclean" ever since Biblical times, and the popular prejudice has been furthered by many writers of fiction. Several who have investigated the matter state that undoubtedly a number of different diseases appearing on the skin are included in the Biblical accounts, and one can discover indistinct references sufficient to identify some of them; thus, writers have found allusion to syphilis, favus, ringworm, pinta, scabies, psoriasis, eczema, morphoea, leucoderma and perhaps other affections on the skin. The cry of "unclean, unclean," and the separation of those afflicted, without the camp, related therefore to various eruptions on the skin, and not at all to present-day leprosy, and affords not the slightest reason for such action to-day. No instance is on record where persons who mingle freely with them have ever become infected.

In what manner the disease is acquired is not definitely known, although Mr. Hutchinson's arguments in favor of the fish hypothesis are strong and clear.

Mr. Hutchinson is quoted as follows: "No other article of food can be mentioned which is in use in all leprosy districts. Most of the places where leprosy is largely prevalent are on the sea coast, and it is especially common on islands. Wherever a community is found which subsists largely on fish, there leprosy is present. It is not necessary, of course, that a large quantity of fish be eaten, for the smallest portion, if it contains the germ, introduces the disease."

There is certainly enough reasonableness in the theory to warrant careful scientific inquiry along modern lines of bacterial research.

The Diagnosis of Intestinal Autointoxication.—Anders (Archives of Diagnosis, April, 1909) considers that the diagnosis of this condition should be made with great caution, as it is a very difficult problem.

When there is present any acute or chronic disease the diagnosis of primary enterogenous autointoxication is not admissible, but the case is rather to be regarded as a secondary condition.

Together with the etiological factors, notably impaired metabolism, dietetic errors and certain pathologic conditions of the intestinal tract, as mucous colitis, and chronic appendicitis, the following symptoms would give a positive diagnosis: Heavily coated tongue, fetor of breath, indications of Rigg's disease, headache at intervals, insomnia, marked constipation, evidence of faecal accumulation in the colon, the elimination of an increased amount of indican and the frequent presence of acetonuria. Various nervous manifestations and the associated febrile arthritic and cutaneous conditions are sometimes present.

The author thinks that the secondary variety is easily recognized, and that it is to be differentiated from the primary chronic autointoxication of intestinal origin. He quotes Taylor as follows: "There is now current in the laity, and also among many physicians, the idea that the heavy consumption of protein is harmful—indeed the cause of widespread disease. It is supposed to be responsible for gout, innumerable ill-defined diatheses, arteriosclerosis, nephritis, a large number of skin diseases, and by extreme vegetarians, for an intoxication sui generis. For all these claims there is no adequate basis. The excess of protein is hydrolyzed; the body displays the greatest vigilance in keeping the system in a nitrogen balance. To accomplish this means an expenditure of energy which might be conceived to lead to disturbance of function. With an increased protein ration the protein residue in the intestine is increased, affording a greater substratum for putrefactive processes. The products of the excessive protein metabolism have all to be eliminated, and this imposes an increased task upon the kidneys. If the products of protein metabolism be toxic, this toxicity must be exaggerated under an excessive protein diet. These considerations make it apparent that the excessive ingestion of protein might tend to alterations in metabolism and elimination that would constitute autointoxication." Clinical experience certainly lends confirmation to the view that such diseases as gout, arteriosclerosis, nephritis and other forms of degeneration are due to autointoxication. Contributing factors may also be found. By regulating the diet, the author has had results which have convinced him that there is a normal diet for the individual. When this is exceeded, change of function and structure may follow.

Fibroid Tumors of the Uterus.—Dr. P. H. Ingalls (Yale Medical Journal, June, 1909) discusses the question of what is the best thing to do for a woman who presents herself with a fibroid tumor. The author says that when a patient first comes to us with a fibroid tumor, and from the history which she presents at the visit—the history of the growth has been one discovered by accident, making no particular symptoms of pressure, causing no profuse haemorrhage at the time of her periods, giving no special discomfort—that she can safely be kept under observation, and so long as any symptoms do not appear which cause her any great trouble or annoyance, that we can give her the benefit of the doubt, owing to the fear of operation, profound nervous symptoms which take place with a forced change of life caused by a removal of the pelvic organs, the small percentage of deaths from the operation, and the small percentage of degenerative changes, and the fact that her operation can be performed at any time when uncomfortable symptoms appear and allow her to wait until the necessity appears for an operation.

On the other hand, a tumor which is growing, a tumor which is making trouble to cause the patient discomfort, one causing too profuse haemorrhage or discomfort from its weight, provided the patient is in good condition should receive the operation.

Treatment of Gas Poisoning.—Dr. Harold W. Dana (Boston Medical and Surgical Journal, May 27, '09) reports six cases treated successfully with the subcutaneous injection of from one to two pints of hot sterile modified Ringer's solution. The injections were made under the breasts, and the solution used is as follows:

Calcium chlorid	.25	gram
Potassium chlorid	.083	gram
Sodium chlorid	7.50	gram
Distilled water	1000.00	c. c.

Oxygen inhalations, the hypodermic injection of strychnine sulphate, hot milk by the mouth and sometimes by the rectum, brandy or whiskey, atropin sulphate hypodermatically, and dry heat were sometimes

used. A favorite mixture for administration was as follows:

℞ Strychninae sulphatis ..... .008
Ammonii carbonatis 1.60
Spiritus frumenti .....150.

M. et Sig.: Two teaspoonsful in water every four hours.

Habitual Constipation. — Dr. Dudley Roberts (Medical Record, July 3, 1909) divides cases of habitual constipation into two main groups, depending upon the mechanism at fault. Each of these main groups is then divided into types or classes depending upon the apparent predominance of an etiological factor. Such a classification is useful in description and simplifies the practical institution of treatment. No confusion need be caused by the combination of these conditions in the individual case, as appropriate treatment for each may be instituted if required.

1. Disturbances of Defecation. In these cases the history is suggestive. Alterations in diet have failed to cure the condition. By digital examination, the rectum or lower sigmoid is found to contain normally soft feces in sufficient quantity. Enemas are effective to a degree. These causes may be grouped as follows:

Neurotic Types.—The treatment is largely suggestive. Habit is very important.

Failure of the Muscles of Defecation.—Only by proper exercise can these muscles be brought back to their normal state.

Rectal Types.—These cases are exceedingly stubborn, but the treatment which gives some chance of success is the establishment of regularity of attempt at defecation, increase of strength of the accessory muscles and lavage of the rectum with cold water.

Anal Abnormalities.—These cases are to be cured only by anal stretching, divulsion or actual division of the fibers by incision. Regularity of habit then prevents a recurrence.

2. Disturbances of Colon Persistalsis: These cases are recognized through proctoscopic examination, the discovery of the empty rectum, and through careful palpation of the colon when cathartics have for a time been interdicted.

Dietetic Types: Regulation of the diet is most important.

Sedentary Types: Exercise must be gradually carried out.

Enteroptotic Types: Main reliance is always to be placed in the improvement of nutrition and the increase of fat by a period of rest in bed and forced feeding.

Colon Atony: Massage must be kept up for some time if actual results are to be obtained. Oil enemas sometimes work well.

Spastic Types: The underlying neurotic conditions are always to be carefully considered and treated. The diet must be abundant but free from irritants. Oil enemas are of the greatest value. Liberal doses of bromide and adequate doses of atropine are of great value.

Catarrhal Cases: The diet must be full and unirritating. Massage is of value when there is no spasm. Intestinal lavage is of far more value than oil enemata.

Treatment of Ailments Due to Heat. — Several groups of remedies are available:

1. Dilute Acids.—Drinks may be given, in which a few drops of the acid are contained; or the acid may be taken as a medicine from hour to hour. This group is useful to relax the blood vascular system, the acids acting as refrigerants. If there is a condition of fever existing, due to reaction to some source of irritation, if this be infectious, choose: For strumous or cachectic patients the syrup of hydriodic acid, for infections of the intestinal tract either hydrochloric acid, or sulphuric acid. The latter in cases in which relaxation of emunctories, skin, kidneys and bowels, exists. The former in sthenic conditions. If the fever be due to depression of overstimulation, and retention of waste products, order the syrup of citric acid. If there is nervous depression, order with the citric acid preparation some dilute phosphoric acid. A good plan to follow is that of noticing the general characteristics of the patient. If there are indications for iodine or hydriodic acid, combine these with the others, syrups of citric acid, or phosphoric acid. Nitric acid is not valuable unless there is oxaluria, or some purin body difficult of assimilation.

In giving any acids for the effects of heat, small frequent doses are best. And if these doses are well diluted with water, the effect is satisfactory. Protect the teeth with a glass tube.

2. In the ailments due to heat, characterized by vasomotor weakness, strychnine is very valuable. With this alkaloid a very small amount of tincture of capsicum, and some extract of gentian, act favorably. At first, we should add other remedies suitable for any special ailment, valerian, cimicifuga, pepsin, calisaya, sumbul, according to special symptoms. Instead of a form of strychnine we may use brucine, or ignatia amara.

Calisaya is very effective, when ordered for patients who have no idiosyncrasy against it. To the elixir of calisaya we may add tincture of sumbul, or tincture of gentian, and some essence of pepsin.

3. When the effects of heat are evidently increased or largely due to anemia, this condition must be met by dietary reinforcement. Many patients do well with frequent meals, in hot weather. Especially for those long exposed to high temperature and in ill-ventilated rooms, we should see that meals are easily digested and frequent. Ice cream acts magically in the cases of those who are not able to digest the heavier starchy sources of energy. Milk in any form is to be held in mind. Junket, cup custard, corn starch, gelatines with cream, tapioca, sago, rice—these are all excellent and from them may be chosen what best accords with the taste and need of the patient.

4. The use of water. Fortunately, there is water in plenty. When drugs fail or are not at hand, the use of cold water in severe heat cases is always possible. In sun-stroke ice and ice-water freely applied is cardinal treatment. Hot water is best in cases of relaxation, and genuine heat prostration, as H. C. Wood has shown, will readily yield to heat vigorously employed.

5. Gastrointestinal conditions due to heat indicate a radical dietary change. Gelatine, albuminoids or meat broths are safest. Lime water, bismuth, and charcoal are of first importance. Kino, krameria, and salol are good adjuncts. Always unload the bowels if any retention is suspected. After this minute quantities of alcohol, as sherry or brandy, will be valuable. Remember that alcohol reduces temperature.

6. Acute mental symptoms due to heat will generally subside under the exhibition of ice and cold water. The employment of dilute phosphoric acid is advisable. Calomel may be very useful. It seems to exert a powerful revulsive action. In the beginning, order a single large dose of calomel, of from five to fifteen centigrams. A saline follows. Cold water along the spine, not too long continued, will stimulate well.

7. Acute cardiac symptoms, not due to valvular disease, but due to heat, may be combated: If causing syncope, by camphorated hypodermics. If causing palpitation, by ice compresses.

When valvular disease coexists, rest in bed and the exhibition of digitaline is indicated. Be careful to order ice cream and cool solids, which have the preference over liquids on account of the dangers of increased vascular tension. Attend to renal elimination. Give purges.

8. Attacks of tonsillitis are not rare in heated weather. Some occur among people of gouty or rheumatic tendencies. Diphtheria is not impossible. Be careful to take cultures for examination in doubtful cases. A well planned and nutritious diet will assist materially in warding off these illnesses when the hot weather reduces our defensive forces.

9. Certain eczemas depend on changes of weather. Psoriasis and erythema are also met with. Obscure digestive conditions must be ferreted out. When these illnesses are connected with gouty tendencies a complete change of scene is often necessary.

Antiseptic Dressing.—The following is excellent to apply on cuts:

℞ Salol ..... 15.0 grams
Camphor ..... 10.0 grams
M. Sig.: Apply on cotton.

Hypernephroma.—W. Trotter (Lancet, June 5,'09) finds 75 per cent. of cases of tumors of the kidney to be hypernephromata; the remainder are made up mostly of sarcomata, to a much less extent of aquamous epitheliomata of the pelvis, while a true carcinoma of the kidney apart from hypernephroma is a very great rarity, or possibly does not exist. The kidney tumors of children are practically all sarcomata; there is but one recorded case of hypernephroma in an infant. Malignant disease of the kidney affects earliest childhood and middle age, but rarely young adults and the aged. Hence hypernephroma is the common kidney tumor of adults; conversely, any given tumor in an adult is much more likely to be one of this type than anything else. This is probably the only absolutely certain etiological factor bearing on the disease. There is the history of injury, but the conditions here render this history suspicious. The tumor may be present for a long time before it is discovered, so that injury may come to have its apparent importance merely by calling attention to the part; moreover, an injury may induce a hemorrhage from a kidney the seat of a tumor when it would not do so from a sound one. Once the diagnosis is established the treatment is clear; such a kidney must be removed. A local resection when the tumor is small will not do; nothing less than total nephrectomy is justifiable. In the absence of secondary growths mere size of the tumor is no contraindication unless there is obvious involvement of other abdominal organs. Although tumors of the colon suitably placed frequently involve the kidney, tumors of the latter rarely involve the colon. In favorable cases there is always an excellent probability of very prolonged immunity—a period of ten years' freedom from recurrence is not unknown; it is probable, however, that unless operation can be done a good deal earlier than at present permanent cures are likely to be rare.

Caisson Disease.—M. A. Starr (Med. Rec., June 19, 1909), from an analysis of 310 cases reported in recent years, finds the following symptoms to occur in the order of frequency: (1) Myalgia, or severe pain, especially in the back muscles, but also in the extremities; this is a uniform symptom, whence the term "the bends" used by the workmen, the patient being practically doubled up with pain and unable to move the muscles or to straighten himself out as in a case of intense lumbago. (2) An affection of the ears, either a rupture of the drum or such an intense congestion of the inner ear as to produce symptoms comparable to Ménière's disease—vertigo, vomiting, intense prostration, tinnitus aurium and deafness. (3) Pains in the joints, classed together as arthralgias; probably there has been a sudden effusion of fluid into the joints, stretching their capsules without any acute inflammatory condition—in proof of which the frequency of swelling without heat or redness can be cited. (4) Acute paraplegia; (5) Monoplegia, cerebral rather than spinal in type, and undoubtedly due to localized areas of softening, or to malnutrition in the cortex produced by bubbles of air in the cephalic veins; such bubbles can act as emboli and hence, if in the cortex, are more liable to produce monoplegia than hemiplegia. (6) Symptoms of intense vertigo of cerebral nature, undoubtedly due to emboli in the cerebellum; these resemble in many respects the symptoms of Ménière's disease, but are followed by paralysis of some of the cranial nerves, indicating that the origin of the symptoms is not in the ear. (7) Next comes asphyxia, the patient showing all the signs of faintness with irregular heart action; these symptoms are, of course, temporary in their nature. (8) Aphasia has been observed in a number of cases. Recoveries have been recorded in many cases where the symptoms were largely cerebral—cases presenting the phenomena of acute transitory mania, those presenting symptoms of hemiplegia, those with symptoms of various types of aphasia, temporary deafness and blindness, and those numerous cases in which peripheral auditory nerve disturbance has been produced by lesions of the inner or middle ear, recoveries have been recorded. Evidently, therefore, apoplexy or paraplegia accompanying caisson disease has a prognosis differing much from that in other circumstances.

Nausea.—I. Boas (Berliner Klin. Woch., June 14, 1909), believes this symptom has not been sufficiently considered. Among the causes are parasites (especially intestinal), arteriosclerosis, retention of urine from prostatic hypertrophy, brain tumors, icterus, uremia; in such cases there are apt to be more prominent subjective and objective symptoms. Nausea is rare in gastritis, but may be found in connection with vomiting in conditions of stasis; it is common where there is abnormal formation of gas in the stomach or intestine. The majority of the cases in which nausea is the prominent symptoms are in women; and there is a close connection with various phases of menstruation. Genital and other hemorrhages are apt to induce it; it is fre-

quently of purely psychic origin. Undernutrition is generally present. Nausea is not closely connected with the taking of food; it is more influenced by position and is usually removed or lessened by recumbency. The symptoms probably depend on a vasomotor cerebral disturbance which is favored by anemia; with this, however, the stomach has nothing to do, as is evidenced by the unaltered secretory activity of the organ; or if there is a slight deviation it is in the direction of hypo- rather than hyperacidity. The diagnosis is usually easy; but in men especially careful physical examination should eliminate all organic causes. In women a beginning pregnancy may be overlooked. The prognosis is usually good; rarely there are obstinate cases. If the nausea has been chronic a chronic course of treatment will be needed. In treatment we insist on rest; and the institution of the proper psychic measures. The diet should be easily digestible, palatable and sufficiently nourishing. Boas has found hot compresses to the head useful. Massage is objectionable in the earlier stages; forced or excessive feeding should be avoided. The bromides are useful in cases of moderate severity; chloral may be effective in mild cases, but fails utterly in severe ones. Chloroform is palliative only; codein of little effect. Morphine in small doses hypodermatically may be used only in severe cases; but its use is questionable and its effects uncertain. Medicines are of little value; but rest and patience will usually be successful.

Euthanasia in Alaska.—Chloroforming the venerable is not practiced in Alaska, though an equivalent process is reported. In the Colville River country an old man was recently the willing victim of a custom, which runs through centuries of the dim, legendary history of the Esquimaux, of making away with helpless invalids and of the aged to whom life has become a burden. The old man in the case reported had been coughing miserably. He cocked a rifle, handed it to his eldest son, with the command to put him out of his suffering; but the boy refused upon instructions by whites. The sufferer then took the weapon, placed the muzzle in his mouth and touched the trigger with his toe. In another case on the Russian Diomede, an island in Bering Strait, the sons obeyed implicitly. It was a typical old Esquimau death, in a large igloo, the roof of which was supported in the middle by a short beam. To this beam the boys fastened a strip of walrus skin, at the end of which dangled a noose. They helped their father to the edge of the bunk, fastened the noose about his neck, let him swing off his high bed and strangle to death. This is not cruelty among these people, who are kindly and affectionate; the act is considered one of mercy, quite as one kills an animal that is suffering and cannot recover. When death was plainly approaching and the sufferer asked to be relieved his request was in the past always granted; the custom is now dying out, however, through the influence of the whites. "He died himself," means that the Esquimau died without the affair being hurried along either by his own hand or that of a friend or relative; though possibly there may have been professional attendance.

The Famous X Club.—The centenary of the birth of Charles Darwin recalls the memory of this club, of which the great evolutionist was from time to time the guest; the surviving members are now very few. The club originated in 1864; and its object was to provide a certain meeting ground for a few friends who were bound together by a community of scientific interests. Among the survivors is Sir Joseph Hooker, O.M., the oldest living member of the Royal Society, now nearly 93; and Lord Anebury who in those days was Sir John Lubbock. Lord Morley, at that time plain John, was also a guest. Among the original members were Herbert Spencer, William Spottiswoode, a former president of the Royal Society; Prof. Tyndall; Prof. George Bush, secretary of the Leimaean Society; and Sir Edward Frankland, all of whom have long since passed away. The original circle was broken up on the death of Spottiswoode in 1883; and after holding 240 meetings the club eventually came to an end in 1893.

In the Good Old Days.—The proverb that "the remedy is worse than the disease" must have been coined in the eighteenth century (Cornhill Magazine). Physicians then treated their patients with a violence bordering on assault and battery. Sickness seemed then to be some kind of a demon to be overcome by pills, plasters, bleeding and burning; and if the patient incidently got untoward effects from the torture and died, so much the worse for him. Air and water were considered the most dangerous things for a sick person to have; and his misguided demand for them was a sign that he should have still less. The windows were shut; and the curtains of the four-poster were tightly drawn around the recumbent unfortunate gasping for breath. If he burned with fever the blankets were piled on him. A desire for water meant that he could have none; whilst a lack of appetite proved that he should be stuffed with food. A bath was unthinkable. The deadly results of breathing night-air were accentuated in medical works; all air was bad, but the night quality often proved fatal to "young ladies of beauty, fortune and great merit and to young gentlemen of parts and breeding." One bold physician recommended that the bed-chamber should be ventilated—in the day time; another dared suggest that consumptives might benefit from sleeping in a pure atmosphere. The rule for ablutions was: "hands often, feet seldom, head never"; but one venerable physician censured the advice and was listened to by reason of his years) that invalids might bath their feet in warm water once a week; and under unusual circumstances take a moderately warm bath once a month. The faculty seem to have been in league with the perfumers as well as the undertakers.

Vaccinating the Negritos.—In order for the more rapid work of vaccinating the Negritos who dwell in the mountains of Bataan and Zamboles the services of two chiefs were secured, states the Manila Times. These gentlemen were delighted with the service; they let no members of their tribes escape them; they were accompanied by an experienced vaccinator to see that everything was done properly. But they themselves did the work, making regular reports, and when they ran out of subjects they inspected the vaccinated, and revaccinated all the cases that did not take. They were engaged by reason that in a number of instances Negritos have spread the disease among the residents of the lowlands, and the present scheme promises to put a complete stop to this.

Family Longevity.—The London Standard states that at a local government board inquiry held with a view to compelling one public body to join three others in having a medical officer of health without private practice, it was stated that there was a family of four brothers and one sister living within half a mile radius whose ages were 88, 86, 79, 76 and 72, respectively. But this is much exceeded by the family of Francis Galton who is so consistent an advocate of "Engenics." Galton's grandmother died at 85; her mother at 96; his mother died just short of 90; his eldest brother at 89; two sisters at 93 and 97, respectively; his surviving brother lives at 93 and in good health; his present age is 86. "I find old age thus far to be a very happy time on the condition of submitting frankly to its many limitations.

Excessive Drinking.—Dr. F. C. Richardson, of Boston, in recently addressing the Society of Neurology and Psychiatrics on "The Problem of American Business Neurosis," declared that notwithstanding the prohibition wave that has recently swept the country, "there is every reason to believe that the alcohol habit among men is steadily on the increase." The strenuous American business life is producing in many of its followers a neurosis partaking of the character of neurasthenia, psychasthenia and hysteria; the etiological factors are here chiefly continuous mental activity and excessive use of alcohol. Nicotine is also a producer of neurasthenia; but it is less injurious and less destructive than alcohol. Moderation in smoking is essential; a short smoke after the evening meal is not inconsistent with hygiene, and may serve to soothe and to facilitate quiet thought.

The China Emergency Appeal Committee has made an appeal for medical training and other educational work, half a million dollars being asked for the development of medical and other enterprises and for the translation of the best Western literature into Chinese. In that country trained medical men are now provided for the army and navy only. Consequently the most urgent need of the empire is for medical schools where thorough scientific training may be given Chinese students. It is announced that the Harvard Medical School graduates are planning to establish in China a thoroughly equipped school; the Chinese are in favor of the movement, and several hospitals have already been placed at the disposal of the school for clinical instruction.

The most healthful Euroepan countries, states A. Jules Courmont, who was sent on a mission from France to Scandinavia, are Sweden and Norway. The Sweden death rate has fallen to 14.3 a thousand; and in Norway to 13.5. In France the average mortality is 20 per 1,000. Courmont attributes this favorable state to the hygienic customs of the people—a fine system of public baths and the perfect hospital organization which deals in cases of infection precisely the same with rich and poor. There is perfect discipline in the fight against preventable diseases. The greatest respect is paid to scientific and medical discoveries; and every one from the public officials down to the humblest citizen has a sense of duty. The idea of individual liberty is always subservient to the public good. So states Courmont; one almost seems to be reading a passage in "Utopia."

Leg Ulcers.—The method of Unna is described by S. Pernet (Am. Jour. Dermat., June, 1909): The ulcer is cleaned up with a 1-2000 solution of bichloride, then iodoform is dusted on the floor of the ulcer; then Unna's gelatine paste liquefied in a hot water bath is painted in such manner, it is not placed on the ulcer itself, but on the parts around it showing redness or discoloration. This paste is made by soaking 15 parts of gelatine in 45 parts of water for two hours; we apply gentle heat with the addition of the glycerine until dissolved; then the zinc oxide is stirred into a smooth consistency, and the whole permitted to cool. Double headed bandages in one piece, rolled from either end, are used, the material being the same as that used in plaster-of-paris work. Such a bandage is wrung out in warm, sterile water, with the middle placed on the leg opposite the ulcer. The first turn is made with enough pressure to lessen the character of the limb, the bandages being brought well over the ulcer. It is then taken round the leg with firm pressure, more especially over the actual ulcer, this equal pressure being regulated by the two hands, and the turns being evenly applied. The liquid paste is painted on the bandages as it is wound. The renewal of the bandage depends on the amount of the discharge.

Educational Methods.—How much of medicine the pedagogue should know, and how much of pedagogy the physician who teaches should know may involve fine differences of opinion. But be this as it may, it is a curious fact that when a boy, or girl, has been graduated from a high school, and is presumably fitted to take his or her place among people, no teaching has informed him of the laws of the country and State in which he dwells, laws which he is supposed to know and obey, and no teaching, or very little of it, has informed him of the various contagious and infectious diseases which he would want to avoid. That education should deal with tools, in the form of methods, is not wrong. But at least it might be construed to mean preparation for exact duties in life.

Do not understand by this that we suggest incorporating in high school work a course in medicine and a course in law. Nevertheless, the fundamental facts of both are essential to our knowledge of what, and what not, to do.

The physician, called in to treat nervous and physical wrecks, will endorse such preventive measures.

Cholecystostomy Without Narcosis Six Days After Appendiceal Operation. Death by Embolism on Seventeenth Day.—Dartigues gives the case occurring in a woman aged 64 years. She was suspected of having appendicitis, and operated upon, but the symptoms persisted and on the sixth day a second operation was done without narcosis.

Most sensation is in the skin tissues. It is again shown that after these are divided a considerable manipulation may be done beneath with but a modicum of pain.

[We regret that embolism should have taken the patient's life after such a successful surgical intervention. The question arises whether embolism may have had any causal relation to the surgery, or to its manner ir the absence of narcosis. Did the surgeon feel hurried, operating so?]

MISCELLANY

In Rheumatoid Joint Affections R. Jones (Brit. Med. Jour., July 5, '09) advocates more frequent surgical intervention to correct the deformities incident and subsequent to joint disease.

Metchnikoff has now long been known to blame the lower intestine for most human ills and for premature death. Distaso of Paris is in accord with him, and even advocates the entire removal of the large intestine in childhood.

Cooking is now taught scientifically in Germany, as is pretty much everything else in that empire. Traveling cooking schools are now sent about; and peasants are instructed how to cook cheaply and well. Since the country folk cannot go to school, the government sends schools to them.

Gumma of the Auricular Septum.—Handmerck (Muench. Mediz. Wochen., May 4, 1909), reports a case in a woman aged thirty-five, which occasioned symptoms of aortic insufficiency, with possibly stenosis of the ostium aortae, bradycardia, dysrhythmia of the auricle and ventricle and epileptoid attacks — the Adam-Stokes symptom complex.

Nasal Hemostasis.—Escat (Archiv. Internat. de Laryng.) makes a preventive application to the field of operation of ferric chlorid or of a 1 to 2 per cent. alcoholic solution of tannin. The patient is then watched for half an hour, and if no secondary hemorrhage occurs tamponing is not necessary. The astringent and coagulating action of these drugs is peculiarly effectual in the nose.

Rachitis due to lack of lime is discussed by J. A. Schabad (Berl. Klin. Woch., May 3, 1909). Under physiological conditions the amount of lime taken up by the infant may be insufficient, both when nursing and (more often) in artificial feeding; and a reduction of the amount of lime in the milk below the physiological minimum is productive of pathological changes in the bowels, as has been shown by animal experimentation.

The Automobile, when judiciously used, states Scientific American, may offer a remedy for nervous and mental affections. Dr. A. Mounteyrat, a French physician, believes that motoring is a cure for anemia and sleeplessness. He conducted some experiments during several tours of eight days each, and found a decided increase in the number of red corpuscles; he considers that the effect of a week's touring is much the same as that of a residence in high altitudes.

Plated Instruments in Ophthalmic Practice.—W. C. Rockcliffe (Brit. Med. Jour., July 5, '09) finds the plating of instruments may peel off and give rise to very serious complications. In a case of his where, following a cataract extraction, under ordinary conditions, an acute panophthalmitis developed, necessitating the removal of the eye, a piece of instrument that had peeled off was removed from the anterior chamber, and had evidently entered from the instrument in the iridectomy.

With the idea of reducing infant mortality a bill was recently introduced into the House of Commons which would enable local authorities to give mothers of the working class practical help and instruction in the rearing of their infants; the mothers were to be encouraged to give the breast instead of feeding their infants from the bottle. By this bill the public health authorities were to be enabled in suitable cases to provide food, advice and other assistance before the infants birth and until six months afterward.

Yellow Fever.—H. Seidelin (Berl. Klin. Wochen. May 3, 1909) describes bacteria found in the blood in a number of cases; in the majority the parasites had similar forms; they were mainly intraglobular ring and amoeboid forms of varying size. There were also numerous minute intraglobular chromatin granules showing no distinct protoplasma bodies, the nature of which, whether little parasites or the products of degeneration, remains undetermined. Parasites were absent in only a few cases, in which the blood was obtained very late.

The Physician's Scrapbook.—The busy practitioner has often been told about this. Still, as he does not seem to remember, a renewed suggestion may be in order. There is such an advantage in preserving items from medical sources in classified arrangement for reference. Therapeutic notes, general methods of treatment, and important medical articles can be pasted in a scrap-book. To these the owner may add notes of his own, and studies taken from his own cases. Such a reference book becomes a source of great help.

The Homo mousteriensis, whose skeleton was discovered in a cavern near Le Moustier, southwestern France, a year ago, has been interesting savants, who have concluded the remains to be those of a young man between 16 and 18. The jaws are protruding; the skull markedly receding; the nose would seem to have been broad and flattened and the nostrils directed mainly forward—all of these features being very apelike. A trifle of 400,000 years is assigned to the deposit—a late interglacial epoch. This fossil youth would thus seem to be the oldest of the human race yet discovered.

To enable the blind to tell time, the latest of various devices is of German origin—a watch which instead of the twelve figures on its face has twelve knobs. Each knob is made by an ingenious mechanism to sink successively for an hour into the dial. The usual watch ring being at XII., the blind person feels along the face of the watch until he comes to the space where the knob has disappeared. This indicates the hour. The ordinary minute hand is represented by a shorter and stronger indicator, which is raised so as to clear the hour knobs; and by which the minutes can be felt with great exactitude.

Dr. Grenfell's Patients.—"As patients these little people are most excellent (Experiences on the Labrador Coast, Century, June, 1909). They have no fear of pain and heal rapidly—a tribute possibly to an almost germless air." On one occasion, whilst practicing in a large Eskimo tent, there came the turn of a girl of fifteen, who silently held up a frost-bitten toe; she insisted it should be removed at once, before the dense crowd in the tent. "The satisfaction for being for the moment the center of attraction was all the anesthetic she wanted." Grenfell's observation is corroborative of the views expressed concerning the Indian and like people that they stand pain well, and their surgical injuries heal rapidly; but they do very badly indeed when visited by the infections to which civilization is accustomed.

THE ROENTGEN RAY IN THERAPEUTICS WITHOUT THE PRODUCTION OF RADIO-DERMATITIS.*

BY ALBERT C. GEYSER, M.D.,

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IT is not the agent but the reaction of living tissue to an agent that must guide us in applied therapeutics.

The Roentgen ray is produced by the passage of an electric current of high voltage through a properly exhausted Roentgen tube.

The Roentgen ray is the result of a change that the cathode stream undergoes in vacuum.

The cathode stream is a compound body consisting of the Alpha, Beta and Gamma rays.

Each one of these rays have certain properties of their own, especially do they differ as to their penetrative power.

The emanations from radium are identical with those of the cathode stream, and, while these emanations are the inherent property of the element radium, the Roentgen ray is nothing more or less than the production of the inherent property of radium synthetically.

Measurement of dosage of the Roentgen ray, if obtained by its action upon inhert substances, cannot be absolute since personal equation or idiosyncrasy can not be taken into consideration.

It will not be necessary to take up your time with the physics of the Roentgen ray for two reasons: in the first place, we are not at all agreed upon the various theories that enter into the makeup of the phenomenon, and secondly, those of you who are at all familiar with the Roentgen ray are also sufficiently acquainted with the various theories connected therewith.

Again, we are principally interested in the therapeutic results, and for that reason we will consider only so much of the physical properties of the Roentgen ray as seems eminently proper and necessary.

If our therapeutic results, or the effects upon living tissue, can be harmonized with the physical properties of the Roentgen ray, then we will be able by logical deductions to arrive at the physiological properties of the agent and need not fear contra-indication.

In fact, it must always be borne in mind *"It is not the agent but the reaction by the living tissue to an agent that should guide us in applied therapeutics."*

To produce the Roentgen ray we require either a static machine or an induction coil, in other words, we must have an electric current with sufficient tension or voltage to overcome the resistance offered by a glass tube in which a vacuum has been created. This vacuum must be of a certain degree, for if it is too high we fail to produce the passage of the electric current through it, and so no manifestation results. On the other hand, if just too low we produce the cathode ray. It is to the cathode ray that I wish to call your attention at this time.

As far back as 1866, Prof. Goldstein, of Berlin, observed that the cathode stream was a composite substance, because, according to his experiments when a magnet was brought into close proximity to the cathode stream, a division occurred. One part of the stream could in this manner be easily deflected or bent from its path, while the remainder could not be so influenced. Later on, Crookes repeated and confirmed the statement of Prof. Goldstein. It was not, however, until Crookes' assistant, Lenard, concluded his investigations that we really began to appreciate the various qualities of the cathode stream. This, however, should excite no wonder, for the cathode stream in and by itself was not then nor is now of any great import to us. Lenard showed that the cathode rays constitute a bean of corpuscles, consisting of negatively electrified particles having a velocity equal to that of corpuscles obtained in other ways, and that their mass is a thousand times less than the mass of a hydrogen atom. He further showed that the cathode stream could be shut from its path, and by forcing the rays through an aluminium window their properties could be studied.

Among other things it was found that platinum barium cyanide and tungstate of calcium when bombarded by these corpuscles fluoresced more brilliantly than all other radio-active substances known. It was further shown that cathode rays could under suitable conditions be converted into Lenard rays, and under equally suitable conditions into Roentgen rays.

At this time it will be necessary to digress for a few moments from our beaten path and make some investigations into a new but closely related realm. Roentgen in 1896 brought to light that which he modestly termed the X-ray. He did more, however, he opened the way for Becquerel and radio-activity, which again in turn led Professor and Madam Curie to the discovery of the source or fountain of radio-activity by separating from tons of pitch-blend a few grains of radium. This hitherto unknown substance (although its existence was prophesied long before its discovery) was finally found to possess qualities not unlike, if not identical with the ray discovered by Crookes, Lenard and Roentgen. The cathode ray, or at least a part of it, was bent from its path by a powerful magnet, and so could be studied in the ordinary atmosphere. Becquerel demonstrated that some of the emanations from radium responded to the same influence. Not only that, the rays that could be so isolated possessed the same or similar properties. To these rays the name Beta was given.

Duncan in his admirable work furnishes the following table of comparisons between corpuscles of the cathode stream and the beta rays of radium.

We have here not an analogy nor a similarity but an identity with the properties of the gamma rays of radium and the X-ray of Roentgen. The gamma rays cannot be but by a magnet, neither can the X-ray.

Both of these rays possess the remarkable power of penetrating otherwise considered opaque substances, they seem to be neutral electrically, and certainly are the agent chiefly concerned in the physiological effects of both. They further effect photographic plates alike, the various salts capable of becoming luminous do so with either ray; in short, we have here the same similarity between the X-ray of Roentgen and the gamma rays that we found to exist between the cathode stream or corpuscles and the beta rays of Becquerel. Besides the Beta and Gamma rays, Becquerel described the Alpha rays of radium, these he considered as the positive tons, they could with a powerful magnet be bent

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from their path, but in the *opposite* direction from the Beta rays. Their mass is about twice the size of a hydrogen atom with a velocity of about 20,000 miles per second. In radium, these three rays, the Alpha, Beta and Gamma rays, have been isolated and proven to exist, it simply remained to prove their existence or their identity in the Roentgen ray. The existence of the Beta and Gamma rays has long been established, it remained, however, to prove the presence of the Alpha ray in the Roentgen ray or at least in its makeup, and this was accomplished when it was found that zinc sulphide would phophoresce under the influence of the Alpha rays.

When, therefore, zinc sulphide became luminous under the influence of the Roentgen ray, we were sure of our proposition, namely, that the Roentgen ray was a result of an ever present accompaniment of at least three different rays; it is further possible that these three rays are ever present in the cathode stream, and all these three rays when projected from the cathode to strike the anti-cathode are thereby converted into X-rays. It does not necessarily follow that the X-rays begin or are formed at the platinum target, on the contrary, there are many points in favor of the opinion that the X-ray does not manifest itself until it arrives on the outside of the tube and there takes on all the properties in the normal atmosphere of the element radium. In other words, we have succeeded synthetically in producing the effects natural to radium, by passing an electric current under high pressure through a suitable medium, the Roentgen tube.

The emanations from a Roentgen tube then are the result of several factors. Each one of these several factors must be taken into consideration if we wish to account for the therapeutic effects of the Roentgen ray. This explains to us the reason why all the various systems of measuring the therapeutic dose have fallen so very short of the ideal.

A system of measurement of the therapeutic dose that takes into consideration a sort of general consensus of therapeutic effects must of necessity be fallacious, since it is impossible to properly gauge the personal equation or idiosyncrasy of the patient, and from personal experience this is a very important and more variable factor.

Again, all systems of dosage seem to be built upon the one dominating idea that a radio-dermatitis is an essential element in the therapeutic results. The dangerous element seems to be well recognizd, and for that purpose we are told to keep well within the safe limit, etc. The safe limits of what? Why, the radio-dermatitis, of course. Yet one of the earliest constitutional effects noticed was the fact that nearly all opreators in the zone of Roentgen ray soon showed signs of absolute oso-ospermia, but had never seen any signs of a radio-dermatitis. This effect upon the reproductive organs has been thoroughly tried out, and the results have been most uniform. At Cornell University Medical College we even went so far as to study the effect of the Roentgen ray upon eggs during the process of hatching. The hen sitting upon the eggs was daily exposed to the ray, during each exposure some of the eggs were taken away, properly marked and later replaced, so that at the end of three weeks out of twelve eggs seven chicks were hatched, the remaining five eggs were examined, and the process of evolution had been arrested at various stages of development. Out of the seven chicks that were hatched, one had practically no feathers at all, another had feathers over the body, but could grow no heavy tail or wing feathers. Both of these died during the first week in spite of all the care that could be given them. Still others seemed small and remained stunted, then died at the end of four and six weeks. One pullet, and especially one rooster, seemed to thrive and promised to do well. In fact, the rooster did too well. He not only acquired his normal size, but never seemed to stop growing; he developed very long legs and a very long neck and bill and appeared while walking rather ungainly and awkward. One could almost say that he was top-heavy or seemed ataxic. He lived for seven months, and one day without apparent reason fell over and expired.

This was the fourth time this experiment had been gone through with, and the most minute care as to every detail was strictly observed. The living chicks were taken to a farm and personally cared for by Dr. F. M. Jeffries, pathologist to the N. Y. Polyclinic.

From these and similar experiments we were forced to the conclusion that a radio-dermatitis was an unnecessary accompaniment of the therapeutic results of the Roentgen ray. Yet on the other hand, we fully realized that the Roentgen ray possessed some remarkable effects, and the thought presented itself to us that the nearer we could get to the source of these effects the better they ought to be.

Radio-dermatitis was thoroughly investigated in all its phases, especially its etiology, for we must look for results, rather in its prevention than in its cure.

One fact was very evident, the radio-dermatits accidental or otherwise was due to a combination of agents. Holtzpnecht and Sabouroud had already shown that the chemical effect upon certain substances could be formulated, but here we were dealing with inert materials and they were obliged to respond to certain well-known physical laws. Even here the principal effect of the Roentgen ray on these substances was due to a sort of cleavage or splitting up, not unlike the results of electrolysis. In other words, a decomposition of the molecules to form atoms with a recombination of the atoms to form new molecules with finally a rearrangement of the newly-formed molecules to form new compounds.

These changes are primarily due to four causes: First, the ironizing power of the Roentgen ray. Second, that the charged Roentgen tube is a converter and surrounded by a static charge, which, when separated by a dielectric from a capacity, is capable of inducing into that capacity currents of opposite polarity. The current that is in this manner induced into the patient, who happens to be a grounded capacity, materially assists in the ironizing power of the Roentgen ray. Third: The vibratory effect of the ray, acting upon the individual cells as a disturbing element, much the same as a powerful note sounded out of harmony with a certain chord, tends to silence or cause disharmony in that chord.

Fourth: The Roentgen rays as the radiation from radium are the result of several rays, each of which possessed qualities peculiar to itself. The Roentgen ray does not entirely lose these qualities, in fact, it shows that all Roentgen rays are made up of a certain number of rays which possess remarkable penetrative powers. These rays are not absorbed by anything and pass through the body, others are absorbed by certain parts

of the body, while still others enter the body only for a very short distance; even the skin being often sufficient for their entire absorption.

The proportion in which these various qualities or rays exist depends upon the causes, viz., the vacuum in the tube, and means used for generating the current. One point must be emphasized here. Whenever the rays are absorbed there we have the same maximum physiological effect, and now we can understand why operators working within the field of the Roentgen ray become sterile without the previous production of radio-dermatitis. These operators were not close enough to be affected by the less powerful rays, but were affected by those rays that possessed the power of penetrating their bodies even at a considerable distance and were then absorbed. It is then a perfectly logical deduction if these rays affected tissue by decomposition, such tissue as the ovaries or testicles being of the highest possible kind of tissue in the body should suffer first and principally, for even the slightest interference with the cellular mechanism of such highly organized tissue would cause never to be repaired damage among them. This also explains to us why all glandular tissue becomes influenced by the Roentgen-ray in preference to the more simple structures. The knowledge that tubes with a high vacuum caused less often radio-dermatitis than those with a low vacuum seems now simple and clear. Again the fact that a static machine used as a generator was much safer than a coil finds its explanation in the fact that in the static machine the quantity of current is limited while in the coil it is limited only by the carrying capacity of the various parts involved.

What, then, does all this teach? If it teaches anything at all, it is the fact that we can produce, nay we must produce, all the therapeutic effects that the Roentgen ray is capable of without the production of a dermatitis. Secondly, it teaches that the Roentgen ray in its effects does not materially differ from other similar agents, a small dose or short exposure stimulates; a larger or medium dose causes reaction by gentle inhibition; a large dose, or one of long exposure, inhibits to the point of destruction. In each of these doses the factor of the quality of the ray nor the per sonal equation of idiosyncrasy must never be overlooked.

How, then, can a dermatitis be prevented? By removing the cause. The causes were four:

1. The ionizing power of the ray; this, of course, is the essential quality of the ray and can therefore not be eliminated, but it can be controlled and minimized, by removing the second factor which increases the susceptibility of the skin to ionization, namely, the inductive influence from the charged tube.

The third is the harmonious vibratory effect upon especially highly organized tissue; this again cannot be removed, as it is practically similar to the first or ionizing power, but as the second it can be controlled by selecting the rays and forcing them to act only at such places and upon such tissues as are desirable.

In the fourth, the rays possess varying powers of penetration, and is, therefore, directly under our control by selecting the proper vacuum and the energizing agent.

Summing all these four factors upon into one ininstrument, led us to have constructed a suitably modeled tube made of lead-glass everywhere excepting at one point, here a flat window of crown glass is inserted; there is, of course, nothing new in the construction of lead glass tubes. They had been in use both in the United States and Europe, but it is the next feature. The tube known as the Cornell tube must be suitably constructed so that the crown glass window can be brought into direct contact with the tissue to be treated. When such a tube is in direct contact with the tissues the only rays that can escape from the tube are just where they are wanted and nowhere else; again, when the patient is in contact with the tube, there is no inductive influence but a conduction of the static charge which may surround the tube, through the patient into the ground. Again, no matter how weak the rays may be, they all pass unhindered through skin and so exert their influence beneath and not upon the skin.

If then we are called upon to treat the skin lesions by means of the Roentgen ray we divide our lesions into those with open or denuded surfaces, as rodent ulcer, epithelioma, lupus vulgaris, carcinoma, and sarcoma and some cases of eczema. For here there is no danger if our tube is in close contact with the lesion of causing a dermatitis, for there is no derma to become inflamed. Furthermore, there is an external avenue or means of escape for the material which we have destroyed, and the system is not likely to absorb the same and so become toxic. If, on the other hand, we are dealing with the skin lesions where the skin is unbroken, such conditions as superfluous hair, keloid, sycosis, eczema, ringworm of the scalp, mycosis fungoides and rhinoscleroma, then as before the tube should be in direct contact, but only a small area treated each time; this may be best accomplished by moving the tube to a new area every few minutes so that the skin locally receives as little treatment as possible yet the underlying tissue may receive a full dose, but distributed over a wide area.

There are also a few constitutional diseases that have yielded astisfactory results, among them lymphatic leucaemia, Hodgkin's disease, and tubercular glands. Personally I am convinced that splenic leucaemia is not curable by the Roentgen ray, but the symptoms may be mitigated and even life prolonged, but sooner or later the patients have all succumbed to the disease. Hodgkin's disease offers slightly better results, but in tubercular glands we possess in the Roentgen ray almost a specific. In fact, I know of no agent that has, at least in my hands, shown such uniformly good results in tubercular adenitis as the Roentgen ray.

In these cases the tube is as always brought into direct contact with the skin over the lesion and every few minutes a new area treated. About 10 to 15 minutes are consumed in treating the average case of adenitis.

Of the unbroken skin lesions hypertrichosis offers the best possible results to the ray. There is never any sensation, reddening or other unpleasant effect. Frequently I have used depilatories from the beginning, and the entire face is at once clean and kept so during the entire time of treatment. The tube is as usual placed in

direct contact and kept moving so as to cover the entire region over and over again in 15 to 20 minutes. No dressing or other agents are necessary. The hairs fall out after the 6th to 10th treatment; by continuing the exposures the hairs never return. Most of my cases thus treated privately in my office, as well as those treated in my clinics, remain under constant treatment for at least six months, thus receiving about fifty such exposures with complete and permanent loss of hair, but free from any and untoward effects upon the skin. With about 20,000 exposures during the last four years, not a single case of dermatitis has developed and both operator and patient are thereby protected.

RADIO-DERMATITIS.

If we study radio-dermatitis, we study one of the phases of the pathological physiology of the Roentgen ray.

Fifty years ago Virchow in his "Cellular Pathology" gave positive proof of the dictum that every animal appears as a sum of vital units, each of which exhibits in itself all the characteristics belinging to life.

Not content with that, he maintained and sustained the idea that each cell must spring from a preceding or parent cell by direct division, or indirect division. He believed that the character and unity of life are preferable not to any single locality of a higher organization —for example to the brain of man—but rather to the definite, constantly recurring arrangement which every single element bears to itself.

Taking the correctness of this view for granted, the composition of a larger body of the so-called individual, must always depend upon a social arrangement. It represents in fact a social organism, in which there is a mass of single existences, related to one another in such a way, that every element has its own special activity and each when excited to activity by other parts, does its work and performs its function of and by itself.

It is also necessary to bear in mind that even the simplest form of cell is a highly organized compound body and that each of the component parts possess and perform their own special function. Thus the constructive metabolism as well as the entire assimilative process of the cell is presided over by the nucleus which at the same time furnishes the physical basis upon which the transmission of the hereditary character of the cell depends. The cytoplasm of the cell body, on the other hand, is concerned in those phases of metabolism which result in the liberation of energy in movements of various kinds and in the formation of new chemical subsances.

At a meeting of the German Naturalists and Physicians held at Frankfort-on-the-Main, in 1896, Weigert advanced an hypothesis the essential features of which are: that physiological structure and function depend upon the equilibrium of tissues, maintained by mutual restraint between its component cells; that destruction of a single integer or group of integers of a tissue or a cell, removes a corresponding amount of restraint as the point injured, and therefore, destroys the equilibrium and permits of the abnormal exhibition of bioplastic energies on the part of the remaining uninjured components. This abnormal bioplastic acitvity may be viewed as a compensating hyperplasia. This hyperplasia is not, therefore, the direct result of external irritation, and cannot be since the action of the irritant is destructive and is confined to the cells or integers of cells that it destroys. It occurs rather indirectly as a function of the surrounding uninjured tissues that have been excited to this increased bioplastic activity, and due to the removal of the restraint hitherto exerted by the cells destroyed by the irritant; finally, when such bioplastic activity is called into play there is always hypercompensation, that is, there is more plastic material generated than is necessary to compensate for the loss.

Again, we know that a certain amount of regeneration always takes place especially in the lower forms of cells, such as epithelium or connective tissue cells and blood vessels, while in the more highly organized tissue such as ganglion cells or gland structure this power for regeneration is almost absolutely wanting.

After an injury, the loss can only be restored by a proliferation of the cells destroyed, thus regeneration of epithelial tissue can only occur as the result of proliferation of epithelial cells, muscle regeneration only by proliferation of muscle cells.

If, however, this were so simple, then indeed there would be no such thing as malignant growths, yet how often has it happened that after a person has been sufficiently exposed to the action of the Roentgen ray tissue degeneration was followed by malignancy necessitating the amputation of the part affected. In fact, it is with a shudder that we are obliged to ponder over the sacrifice of life and limb that this agent, the Roentgen ray, has in so short a time claimed as its victims from the workers in this field.

What then has taken place in the production of a radio-dermatitis?

We must differentiate between the results of sudden massive doses and the slowly accumulated effects of oft repeated but small doses of the Roentgen ray. Our patients usually suffer from the former while the operators invariably suffer from the latter.

There are at least three principal effects from the Roentgen ray upon living tissue.

A small dose or short exposure acts as an irritant and so stimulates tissue growth; a medium dose by over stimulation, causes inhibition, while a large or lethal dose by over inhibition causes destruction and disintegration of cells. Small, medium and large doses is not very scientific, neither is the statement that a certain number of units acquired by any of the many methods for measuring the ray constitute a certain dose.

After all, a small dose for one patient may be an extremely large one for another. During the winter of 1908 I had the privilege of appearing as expert in no less than ten damage suits of the so-called X-ray burns. The worst burn among these was one of the breast and shoulder admittedly exposed only two minutes for the purpose of taking a radiograph.

We are safe in assuming that the radio-dermatitis is not the direct result of the Roentgen ray, but on the contrary, it is a direct attempt upon the part of the tissues to repair a certain injury inflicted by the ray upon them.

In the early part of this paper we say that ionization was one of the principal effects of the ray.

If there is one property known regarding the effect of the Roentgen ray upon the cellular elements of the body, it is the capacity for their utter destruction. In other words, it causes cellular death; this cellular death is followed by cellular disintegration of cell elements.

The cell elements when dead are putrid material and form poisonous compounds most deadly to the part or even the whole body.

The Roentgen ray does not kill the cells with one blow as perhaps the galvano-cautery. With this agent we also have a cell destruction, but the elements of the cell are completely oxydized, and what is of greater importance, the skin that covered the destroyed cells has been opened and the system furnished with easy and perfect drainage. Here we have an inflammatory reaction and a walling-off process to prevent any possible absorption into the surrounding tissue, but it is doubtful, even if we had absorption taking place, whether it would result in the same kind of poisoning that we find after Roentgen ray disintegration.

After a cautery or similar burn, we have this reaction process start at once; within a few minutes after the application all the symptoms are at their worst. Not so with the Roentgen dermatitis, and here is where they differ from each other. The actual cautery kills and destroys or burns up completely and at once, and at the same time furnished an easy outlet for the destroyed material. The Roentgen ray simply injures the cells from which they either completely recover or more or less gradually succumb.

When the cells or parts of cells gradually die disintegration takes place, putrid compounds are formed of the most poisonous character, and there is no avenue for escape except through the general circulation. The system recognizes the poisonous character, hurries its phagocytes to the locality, tries to prevent the poison from entering the general circulation, and so by a defensive process sets up a violent dermatitis, most rebellious to all known treatment until a slough has formed, the skin broken, and so an avenue for escape is furnished.

As might be expected this entire process, from the time of exposure to the disintegration and the formation of poisonous compounds and the necessary reaction of the system, takes several days, hence when a susceptible patient is exposed to a lethal dose of the Roentgen ray, days even weeks may elapse before this process is completely established. After nature has established an outlet for this toxic material a shorter or longer time is then required for a normal condition to be restored.

When the process of repair or regeneration does actually begin it is in absolute accordance with the laws of physiology. Those cells which under any other circumstances possess the power of regeneration to a marked degree, such as the epithelium, the connective tissue cells and blood vessels, are present in great abundance, hence the results from an acute radio-dermatitis is the fibrous material liberally interspersed with blood vessels giving us that pathognomonic picture of telengiactasis as a result of few lethal doses of the Roentgen ray. In contra-distinction we have a somewhat different picture of a chronic radio-dermatitis as seen in most of the operators, especially the backs of their hands.

The small but oft repeated dose only partly destroys the nucleus and changes the cycloplasm of the individual cells; those of the horny layer being most resistant. A cell not only depends upon its nucleus for its existence, but if the nucleus by its environment becomes changed, yet continues to live in this changed condition, it affects the heredity of this cell and all the faults and changes are handed down to each succeeding crop of cells.

The chronic Roentgen ray dermatitis of the operators shows all the various changes that the small but oft-repeated doses should show according to the light of modern pathological physiology.

The atrophic areas prove the sites of previous inflammatory areas with complete cell destruction.

The fibrous material is the result of regeneration in excess of the fibrous cells, while the red areas are due to early destruction of the intima of the blood vessels with consequent over production, causing dilated vessel walls, and last the hyperkeratosis of the epithelium. The nucleus has been changed and this change affects the future character of the cell which is handed down to succeeding generations of these epithelial cells.

When these cells were injured they no longer exercised that necessary restraint and their equilibrium was destroyed with their neighboring cells, hence this overproduction of bioplastic material resulting in hyperkeratoris.

This whole process of the pathological physiology explains not only the cause of Roentgen dermatitis but also the curative effect it might be expected to possess when brought into contact with pathological tissue; it also explains why so many of our earlier patients with deep-seated pathological lesions, especially those of a carcinomatous type, either failed to respond at all, or else at once became toxic and death closed the scene.

The Roentgen ray when viewed in this light is at once robbed of its terror and finally, like the mighty lightning flash, harnessed and made subservient to the will of man.

134 West 76th St., New York.

Cement Maker's Itch is a new disease of occupation, entirely distinct from ordinary itch; being neither parasitic nor contagious, but produced by the chemical or mechanical action of the cement upon the skin. Some physicians have attributed the corrosive action to calcium carbonate and to sulphuric acid. Fresh cement, however, does not contain calcium carbonate; and it is questioned whether slaked lime or even partly slaked lime will produce this effect, for masons working with lime mortar are seldom if ever attacked with cement-makers' itch. The quantity of sulphuric acid in cement is very small. Possibly the effect may be explained by mechanical friction between the skin and very fine but hard particles of cement. Briquette makers, observes Scientific American, are subject to a similar but less serious annoyance. Cement makers' itch and ordinary itch have one symptom in common—intense itching, especially at night. The itching appears to be increased by the heat of the bed, and is also more annoying in summer than in winter. Scratching may produce infected wounds and swelling. Cement makers' itch is an occupational disease; true itch is seldom such. The latter can be cured comparatively easily, but not so cement makers' itch, which is like to be followed by eczema and other complications. The managers of cement works should always require their workmen to wear cotton gloves and garments tightly fastened at the neck and at the wrists. Cement workers on arches or ceilings should wear masks. Both gloves and masks should frequently be washed.

TUBERCULOSIS AND THE AMERICAN INDIAN.

BY JOHN B. HUBER, A.M., M.D.,
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IT is a striking and suggestive statement made in the census reports of the United States Bureau in Washington, that the mortality among Indians is greater than that among our Negroes and far greater than that among our white population—striking and suggestive when we reflect that every third or fourth adult white has been dying of tuberculosis, and that every other adult negro in these United States has succumbed to that disease. It would seem clear that if the present anti-tuberculosis propaganda is not made to extend to our Indian wards that once superb race must soon disappear utterly through the agency of the Great White Plague.

Some important observations have been made *a propos* this subject. Walker, who has been working among the Oglala Sioux Indians in South Dakota, gave his views before the National Association for the Study and Prevention of Tuberculosis (Second Annual Report). He has found that a most radical change, and for the Indian an unfortunate one, has been his change from the tepee to the log cabin or the house. Many a tepee was filthy enough, but they were not all so; there were gradations in habits of cleanliness (or the want of such habits) among the Indians precisely as such degrees in decency obtain among whites. But the more cleanly tepees were less liable to harbor infection than the dirty ones; and even in the filthy ones the dirt was not productive of tuberculosis except when it was impregnated with the tubercle bacillus. Besides, all tepees were amply ventilated; they were frequently moved from place to place and with each such moving they were thoroughly freed from dust and renovated. Slops and filth were indeed thrown on the ground about the tepee; but when these putrefied to a degree sufficiently obnoxious the tepee was removed to another place. Everyone spat into the open fireplace in the center of the tepee. This structure was too small for much overcrowding; and they were moved so often that neighborly relations were constantly changing. To contract tuberculosis one must in the first place be predisposed; and even then contact with the consumptive must be intimate, frequent and prolonged before an implantation resulting in the development of the disease is likely. Therefore, during the tepee life, contact with consumptives was not likely to be sufficiently intimate and enduring to be dangerous. Besides, in these circumstances, infectious material could not so well accumulate. The life the Indian thus led tended to promote vigorous constitutions, and to fortify the system against all kinds of infection.

When, on the other hand, the Indians were removed to reservations and made to live within these regions, they came to have houses. But no plan of building was supplied them. They built small structures, low, with tight dirt roofs, the ground for a floor, every crack or crevice stopped up to prevent ventilation. Heating and cooking stoves were provided them; in cold weather both of these were used simultaneously. Into these superheated cabins the Indians would crowd and swelter. On opening a door on a cold day the exhalations of the inmates would condense in a most malodorous cloud. Then, with the construction of permanent buildings came prolonged visits, with the likelihood of prolonged contact with consumptives. One or two families would crowd into rooms much too small for one family; thus more pollution of the atmosphere, increased danger of infection.

As in the tepee life, the slops and the filth were thrown about the doors of the cabins; but now the Indian could not move his abode away from such constantly putrefying refuse; here was again an enormous fact, predisposing at least, if not essentially infectious.

The primitive food of the Indian was flesh eaten either raw or poorly cooked, at irregular intervals, after the manner of savages; sometimes this meat was abundant, sometimes it was scarce, in accordance with the contingencies of the hunt; nevertheless in this era the Indian was comparatively free from tuberculosis. When the Government put the Indian on reservations and gave him houses it gave him also abundant and varied food and cooking stoves on which to prepare it. Then, for all that, tuberculosis increased. But it was found that those who ate moderately and regularly and prepared their food thoroughly and in cleanly fashion were freer from every kind of infection. On the other hand, there was much tuberculosis among those who glutted on food prepared in a dirty manner and insufficiently cooked. However, the food itself was probably not impregnated with infectious material, and was itself not a source of ingestion tuberculosis.

As to alcohol: Walker finds that the Oglalas began the use of intoxicating drinks before they began to live in houses, and before tuberculosis began to increase among them. "There is no evidence that this (alcohol) caused tuberculosis among them; but it was demonstrated that it did produce a condition favorable to infection with tuberculosis and to hasten its development and increase its virulence."

During their existence as savages the Indians wore skins (with robes in winter); their clothing was never laundered. In inclement weather they suffered hardships. Nevertheless, there was little or no tuberculosis among them; coincident with this inclemency of the elements were the invigorating effects of outdoor life. (I have been told that the Labrador Indians are fast becoming tuberculous. One reason for this is that they trade their beautiful and warm furs for the cheap, tawdry, prettily-printed cotton goods which are brought them by the whites.) Thus, with the modern house, has come the clothing of civilization — including the white man's blankets and building. With these, hardships and exposures have ceased for the Indian. He enjoys instead an unexciting, comfortable, devitalized existence; for which he pays the inexorable penalty—tuberculosis.

The observations of Dr. Martin, of Browning, Montana, expressed on the same occasion, are equally pertinent and important in their application to the conditions here considered. Dr. Martin has for thirteen years been Agency Physician for the Blackfeet Indians in Montana; during this time he has found sixty-five per cent. of them to have died of some form of tuberculosis. The older generations, having more rugged constitutions, have lived to advanced years; but the younger generations have less stamina and easily succumb. The infant mortality among the Blackfeet is appalling; want

of vitality among the parents leads to predisposition among these infants, so that they succumb in pitiable numbers. In all the periods of life among these Indians no tissue or organ seems invulnerable to the tubercle bacillus. Among the full-blood Blackfeet seventy-five per cent. become affected. The part-bloods seem less susceptible by reason (so Martin believes) of the infusion of new blood and of better living conditions. He is convinced that under present circumstances existing on our reservations in general, the rapid spread of tuberculosis cannot be prevented—much less eradicated. Extinction of the American Indian is inevitable unless radical changes are made in the methods employed in dealing with this scourge as it now afflicts that unfortunate race. The Indian, in his aboriginal state, lived under conditions essentially identical with those in which we place our patients in the modern and eminently successful cure. The Indian's whole life was spent in the open air; the tepee in which he slept was perfectly ventilated; his food was abundant, nutritious and precisely suited to his needs and nature. What then are the causes which have changed a race so virile, so noted for its strength and stamina, to a community of invalids whose very racial existence is so gravely jeopardized? These causes are inherent in their semi-civilized status since the white man has assumed charge of their destiny: First, there is the change of abode from the tepee to the permanent dwelling—the log cabin with one door and at most one window, or but half a window. In such a cabin five will live; one or more of whom are consumptive, emitting millions of tubercle bacilli anywhere and everywhere on the floor (often of dirt), on the bedding (which is usually on the floor), on the clothing, the furniture and the like. In winter the temperature remains around 90 degrees, though the air without may be from 10 to 30 degrees below zero; the windows are tightly closed and impossible to open; the door is opened only to admit visitors, until twenty people will be found in a cabin sixteen feet square, and amidst dirt and filth which has been apparently years in accumulating. On a string or pole overhead is found the principal food staple—dried meat—which must surely become infected from the dust arising from the floor. In such atmosphere do these miserable people, both hosts and visitors, cook, eat, sleep; the visitors then go to similar homes and form an endless chain of infection.

Again, the Blackfeet have lived within themselves during many years; intermarriages have been unavoidable till now there has resulted an enormous amount of degenerating and devitalizing inbreeding.

Again, under the discouragements of reservation life as it has obtained during past years, the Indian has become careless of his personal cleanliness and habits; he has become addicted to fire water; he does now many things which predispose him to tuberculosis. The physician practicing among Indians, and especially treating consumption among them, meets difficulties which are thus manifest, numerous and well-nigh disheartening.

Martin further observes that his patients are scattered over a territory sixty miles square; it is impossible to secure proper care and nursing; the patient and his friends will not co-operate as they should; and many regulations and sanitary measures cannot be carried out, be the Indian ever so willing. The Indian knows no rational medicine. It is hard indeed to persuade him that his life and that of his people depends on the observance of hygienic rules, of the importance of which he is both ignorant and unimpressed. It is impossible to get him to take his medicine regularly; he expects immediate results and is disappointed and becomes lax when they are not forthcoming. From the standpoint of nutrition many Indians are in a constant state of semi-starvation; and those having sufficient food know not how to prepare it properly and wholesomely. "It is pitiful to see a tuberculous little child trying to abstract a meal from a piece of dried meat in appearance and hardness not unlike the sole of a cast-off shoe."

There was a notable discussion divided between two papers by Hrdlicka and Leupp, on tuberculosis among our Indians, in the International Congress which convened in Washington in September, 1908. The National Indian Office, in co-operation with the Smithsonian Institution, prepared an impressive exhibit, of which the main feature was the charted result of a special investigation of one hundred families made by Dr. Ales Hrdlicka of the National Museum and Dr. P. B. Johnson, bacteriologist, who visited and examined in five widely separated Western tribes (which were shown by reports on morbidity to be most affected with tuberculosis) and in one of the large reservation schools.

Hrdlicka well observes that tuberculosis in all its forms has become so prevalent in many parts of the country among the Indians that deep study of the subject and earnest steps toward prophylaxis are imperatively demanded.

The tribes visited were selected not only because of the prevalance of tuberculosis, but also because they differed widely in respect of climate, environment, civilization and admixture with whites; and the investigation was carried on during the midsummer months when complicating bronchial and pulmonary affections (other than consumption) are rare. Every dwelling was visited and every member of each family, healthy or unhealthy, was so far as possible examined—the heart and lungs and the cervical glands especially. In suspected cases the sputum was examined; tuberculin tests, though very desirable, were not available and were not employed. The Indians welcomed this investigation; they were glad of an inquiry into the condition which is decimating them and against which they feel utterly helpless; oftentimes absent members were brought back many miles for examination. The consumption mortality in these tribes ranged, during the year preceding the examination, between 80 and 125 per 10,000 population. "This morbidity as well as mortality from the disease are far in excess of what we find in any nation of the white people; they are even considerably higher than those occurring among the American Negroes." Glandular, meningeal, spine, hip, rib, tibial and intestinal lesions were found, in addition to the pulmonary type. The causes of so great a prevalence of this disease Hrdlicka found to be multiple:

(1) A frequent hereditary taint among the young. (2) A favorable condition for the development of the pulmonary form in the presence of the tuberculous glands or other tuberculous process in an individual. (3) The facility of infection, especially in the cold or rainy season; this is a very potent factor. The average Indian has no notion of the nature of tuberculosis or of the possible methods of its propagation. He often

lives in a good house, or one that could easily be ventilated and kept clean, but his habits have not kept equal pace with his surroundings. He dresses warmer than he needs to, thus making himself tender; in cold weather he overheats his home and stops all cracks to prevent the entrance of the cold air. The tuberculous are not isolated; they eat with the same utensils as the rest of the family, and these are not effectively clean. They visit and are visited freely, particularly in the winter. Their soiled clothing is not washed separately. Spitting is promiscuous and unrestrained, on the floor as elsewhere; pipes, spoons and dishes are often passed about indiscriminately and without any cleansing. The pipe passing is an aggravated evil. In the schools and on the reservations wind instruments, never sterilized, pass from mouth to mouth; numerous tubercle bacilli were found in most of the mouthpieces of musical instruments examined. Kissing is rare among Indians; this is, therefore, not a source of infection among them. The use of wooden spoons and gourd dishes prevails among the Indians; and these are more difficult to clean than metal or porcelain. In dwellings with earthy or sand floors the danger of infection from spittle is particularly great; the healthy and the sick spit indiscriminately on such floors, the sputum being usually covered with a pint of sand or earth and thus remaining. Bags, quilts, blankets, etc., in use alternately by different members of the family and occasionally given away are never washed or otherwise cleaned, even if not soiled with direct expectoration, must in the course of time have become impregnated with infected dust. (4) Exposure to cold and wet, actual disease of the bronchi and the lungs other than tuberculosis, and frequent neglect in these affections are in the Indian, as elsewhere, strong predispositions. Many patients date the beginning of their consumption back to a pneumonia, a "bad cold," an influenza or measles. (5) The predisposing influence of disease other than that of the respiratory tract, is not certain; "that of syphilis has surely been overrated." (6) Dissipation, indolence and other enervating factors predispose the Indian to tuberculous infection quite as much as they do the whites. (7) The debility consequent upon want is surely responsible for some percentage of tuberculosis among the Indians. There is much helpless poverty, particularly among the old, who are often, of necessity, or by habit and other causes, neglected by their relatives. Oftentimes their food, while sufficient to sustain life, furnishes, either on account of its quantity or quality, none or little surplus or storage of energy; thus any extraordinary demand on the bodily forces is liable to be followed by a breaking down, tuberculosis resulting. (8) In the non-reservation schools an etiological factor of importance is the depressing effect on the newly arrived Indian child of the numerous regulations in vogue in these institutions. Accustomed hitherto to an almost unlimited degree of freedom of movement and will, such a child is subjected to discipline which extends to at least four-fifths of its waking hours; there is besides, the exertion of learning in a strange language, changed associations, monotony, nostalgia, insufficiently diversified outdoor exercise, food to which the child is unaccustomed—such factors depress and exhaust mentally and physically and in corresponding degree predispose the child to tuberculosis. (9) On the reservations, as well as in schools, white consumptives are permitted contact with the Indians; this increases the chances of infection for the latter.

Hrdlicka has moreover found that none of the cows in any of the places visited (the milk of which is used for the Indian children) have ever been tested for tuberculosis; he has seen such cows feeding along the one street of a village on grass which was certainly stained with tuberculous sputum. Most cases of phthisis in the Indian begin in the rainy or cold season; and the disease takes two main forms: (1) the acute, ending fatally within a few weeks or months; (2) the chronic form, or irregular progress, enduring oftentimes years and perhaps manifesting periods of a tendency to recover. The sexes seem susceptible in nearly equal proportion. Results of marriages between Indians and Whites appear to be freer from the disease than either the full-bloods or the mixed breeds, due to clandestine unions."

A most important result of Hrdlicka's investigation has been the finding of a considerable number of cases on the way to recovery, or actually recovered; such cases were seen in all the tribes and in a number of instances have been watched for years by the local physicians. "These cases prove clearly that pulmonary tuberculosis is by no means always fatal to the Indian, and justify any steps that may be taken for the cure of the Indian consumptive. Hrdlicka believes it to be a misfortune for the Indian to be so isolated as he has been and is from the white; for the latter in taking care of himself would have been obliged ere this to take care of the Indian, in whom tuberculosis would not therefore have acquired its present proportions. But even as it is steps will have to be taken for curbing the infection on the reservations, for apart from humanity to the Indian, the white man needs quite imperatively to act for self-preservation.

Upon the basis of his investigation Hrdlicka deduces the following remedial measures as important to be taken:

The ignorance of the Indian regarding the disease must be combated; he must be taught the prophylaxis, how to live, how to prepare his food, how to nurse his sick—and this by means of lectures, demonstrations, special bulletins, very largely by the physician's advice, but above all by means of regular, clearly comprehended, reasonable, undogmatic instruction to the children in the schools. For these children are free from many of the prejudices of the adult Indian and what is imparted to them in a proper way will become a stable part of their mental equipment, regulating their actions; more than this the children thus instructed will themselves influence, more than can the outsider, their parents and relations. A most urgent need is the introduction of some simple and practical means for the disposition of infected sputum in the Indian home. There should be isolation camps or dwellings, under the care of a nurse and a physician; the difficulties here are the expense, and the reluctance of the Indians to part with a sick member of the family. Whenever possible the earthen floors of the dwellings should give place to board floors, which can be better cleaned. The habit of passing the pipe, as well as of all utensils which cannot be sterilized, should be discouraged. Clothing worn by consumptives should not be used by others; articles made in houses should be prohibited unless their aseptic condition is assured. Dealers in Indian curios

should be compelled to disinfect all fabrics and old articles coming from reservations; such things are oftentimes made by consumptives and often lie for a long time on the floors of infected dwellings. The danger of handling such articles before disinfection needs to be well appreciated also in the various museums. In the western reservations there are Indian police, willing, intelligent and not overworked, who could spread information regarding not only the prophylaxis of tuberculosis, but of hygiene and sanitation in general; they could once a month inspect dwellings and make report. The inveterately neglectful and filthy could and should be punished as are drunkards and other transgressors. An improvement in nutrition, especially for old Indians, is called for; there should be suitable and paying work for the able men among them; alcoholism should be repressed. The Indian medical service should be greatly improved. In the large, and especially in the non-reservation schools the introduction of the child into the changed conditions of life should be more gradual; ample means of outdoor play, as well as of more systematic and pleasurable exercise, are needed; swimming pools must not be allowed to become polluted; there should be more variety of the food, less rules of the table and more attention to individual pupils; occasional excursions away from school, particularly into the schools, have shown most encouraging results; all pupils who begin to ail should without delay be separated from the others, relieved of school duties and given especial attention, not as now until it has fully developed phthisis upon which it is returned to the reservation. The result at present is unfortunate all around; the child is allowed time to infect other pupils, is deprived of possible chance of recovery and is sent back at the height of its disease to infect the camp of its family. The school room as well as the dining room and the work room should be of the "open-air" kind. "If speedy progress can be effected along the above lines, it is certain that the mortality as well as the morbidity of tuberculosis among the Indians will be greatly lessened; if not there is nothing to look for except a gradual aggravation of the conditions, and in many places the Indian's annihilation."

The paper read before the International Congress on Tuberculosis by the Honorable Francis E. Leupp, the National Commissioner on Indian Affairs, is most pregnant and vital; omitting here a presentation of matter already set forth, I note the following:

The Indian is adopting civilized dress, careless whether he wears all his shirts at one time or in succession; he is rapidly exchanging his hard bed on the floor or the ground for the American iron bedstead with woven wire springs which soon become soft and yielding to his body. His food—once the fish of the stream and river, the wild meat of the plains and mountains, berries, acorns or a few vegetables that could be quickly and easily raised by a squaw—has also changed. Here and there the Government provides rations; but the supplementary articles are procured at the trader's—the flour too frequently poor, the canned fruit of a low grade, indifferent coffee and the like. Perhaps the Indian is an allotter and leases his land, living off the proceeds. This gives him months of idleness; his former occupation, moreover, being gone he has not yet mastered any to take its place; the bad liquor which the white man has taught him to drink, to say nothing of the vices which follow in the wake of civilization, contributes in large measure to his physical undoing.

It is difficult to state what are the actual prevalence of tuberculosis and its mortality rate among our Indians. The Indian Office has from time to time collected statistics from its agents and physicians in the field; but owing to the conditions under which they must be procured they cannot be accepted as final. They, however, bear out the testimony of the traveler, the missionary and the occasional student, that the disease is the greatest single menace to the Indian race. Whatever may be the conclusions of science as to the best methods of actively combating the disease it is the Government's duty to concern itself with the more obvious causes of its prevalence, and to take steps to remove these as far as it is possible to remove them under existing conditions.

The whole working force of the Indian Service must first be educated to an appreciation of the necessity of uniform and determined measures for preventing infection; else all the orders from headquarters will fail of accomplishing their full intent. Even when the employee grasps the need of action and becomes versed in the prophylaxis, the great mass of Indians will remain unaffected. The national conservatism of the Indian regarding medical matters; his religion, superstitions and traditions; his general suspicion of the white man—these must be overcome. "When it is considered how long it has taken intelligent white people, trained for generations to a massed and congested society, to understand and apply those simple rules of living which tend to preserve the good health of a community, how much slower must be the process among the Indians—children of nature whom we have dragged already from many of nature's ways!"

Every reservation and school physician and every agent has been constituted a health officer, with power to enforce sanitary regulations within his jurisdiction. One difficulty with which the service doctor has to contend with is emphasized—that old obstacle and nuisance, the native medicine man. Liquor plays an important part in the increasing physical unfitness of the Indian. There has always been a law against the introduction of intoxicating liquors into the Indian country, or its sale or other conveyance to non-citizen Indians anywhere. Like many other good laws, it was for years neglected, being treated as a mere moral declaration rather than a rule of conduct to be enforced by serious sanctions.

The Honorable Commissioner is indeed fully aware of the urgent necessity of doing more than has ever been done before in the way of protecting the Indians against tuberculosis, not only for their own sakes; but also the infected Indian community becomes a peril to every white community near it. He recognizes the difficulty of trying to change the ways of the old-fashioned Indians past a certain point, but for the younger generation, and for such elders as may be disposed to take advantage of them, sanitarium camps have been and are being continually established, where inmates can fairly live in the open air, be constantly under a physician's eye, have their diet, clothing and the like carefully regulated, and be subject to the most stringent regulations as to those matters which make for cleanliness of the person and surroundings and affect the spread of the disease.

DAUGHTERS OF EVE.

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LOVE makes the world. Woman is a fathomless mystery. Within the mortal scope of our medical service to humanity, no personality draws and holds our interest so tenaciously as does woman. Without her there would be no call or calling for the physician. Her majestic mission in the empire of mankind, her versatility of nature, her profusion of endowments and emotions, her temperamental rhythms of ailments, her intimate and rivalless relation to population, her physical and mental magnetism surpass the boundaries of definite analysis.

Thoughtful and studious as men may be in their comprehension of woman, few men ever definitely and completely discern woman. Her capacities are without parallel. According to the Biblical legend of woman's origin, she was not formed of common clay as was Adam—she was constituted of finer stuff. She is therefore more elastic than man, more resourceful in her desires, more strenuous in her alert purpose, more captious in her whims, more devoted in her love. To know woman we must adapt ourselves to the passing phase of her hour. The wife of a year is not the girl of courtship experience. She has advanced in her development of tastes, in her crystalized thought-bound seriousness, in her deft recognition of man's defects, in the unforseen divergence from roseate anticipations, in the physical discomforts incident to the evolutions of her existence.

Endowed with facile spontaneity of impulse, on the veer of provocation woman may unexpectedly surprise us at the crisis of any moment. A creature subject to perpetual change in herself, woman scarcely remains the same in all her characteristics during the evolutions of her years. No one is more alert and acute in jealousies toward her own sex. She swings with the sweep of her "will" with strenuous celerity. She backs her unassumed "won't" with the steel of ruling fixedness. Her untiring ambition redoubles her willing sense of duty. Her natural hospitality yields to you, if of mature years, her seat in the rocking trolley and she insists that you accept it. From love and pity she glides to murmur and antagonism against her hardships.

In the physician's prolonged sphere of service to woman she draws confidingly near to him. She is wont to lay upon his discerning heart many of the incidental burdens of her existence. Touched by the softening breath of her personal interests, her mental grievances, her patient endurance, her compassionate sacrifices, her throbbing headaches, her real and emotional neurasthenias,—the gentle-hearted physician cannot repulse her spontaneous appeals for considerate interest, her natural expectancy for his most responsive and skillful assistance through the complex phases of her life. If all goes kindly well, woman is the doctor's enthusiastic champion. If reverses frown upon his endeavors, she will consider him a presumptuous fallacy, and recoils with cutting lash of censure. In her stress of personal emergency unfortunately ventured, the path of rescue that woman betimes will invite the doctor to enter in her behalf may be deceptive, miry, even hazardous to both. Caught off his guard he may risk the bait of her earnest appeal, or of the proffer of glittering gold under promise of secrecy. But if mortal destiny grow blackness of failure in face of undesired result, woman will betray her secret, bequeath her dying censure to the bungling doctor, and leave to him the punishment of misguided service. But even here we may see the other phase of the woman of it. She will prove loyal to her instinct of love for her secret partner in sexual error, conceal him from exposure to her dying breath, meanwhile her instinct of friendship not long hesitates to "give away" to relentless punishment the professional servant so solemnly engaged to release her from the ill-gotten or unwelcome fruit of trusted love embraces.

But we must look deeper into the nature and proficiency of woman. Through propagation woman rules the realm of human destiny. No acetic dares formulate misanthropic epilogue derogatory to her quenchless endowments. Let him first blot out himself, or humbly bow to the masterly edict of woman's Creator. We never in the weaklings of words can fix the zone of her influence. For a defining line-mark, beginning with the emergencies of the birth of children the round world over; granting a glance at spontaneous intuition, her natural adaptation and training by the fact of motherhood to comprehend the unfolding natures and physical vicissitudes of childhood and youth.

The continuous reproduction of mating men and women on this globe; the profusion of gigantic enterprises of civilization; the material developments won from the earth as God's footstool by industries, by sciences, by all the adjuncts of eternal progress; and through the vastness of it all, from the connubial surprises of venerated Eve to the amative matings of the millions of humans at the present moment, there blends no figure so indispensable and majestic as that of woman. Thrilled by the Creative magnetism of sexual conjunction, no energy has so lifted to the light the stimulus and vigor of the world as has that of woman. Her mutations of temperament, her nervously alert appreciations, her untiring resources that furnish anchor to man's ambitions and aims, that administer to the consolations of his home, that clasp her to her sexual destiny for better or for worse, constitute her at once the ruling queen the responsive mistress, the abiding servant of humanity—ardently sought by man because through the avenues of her love-nature subjected to man, yet by the magnetism of her personality the assured winner of conquests over the strongest of men. If woman stoops to conquer, she conquers the more certainly.

When woman yields herself to man, she represents the ideal of courage. Nevertheless the bravest soldier in fiercest battle field bears upon his panting breast the likeness of the girl he loves, or the pictured face of the faithful wife he has married, and possibly also the innocent smile of the babe she has brought into the living world for him. When we stand in the presence of normally developed, warmly endowed, kindly natured, mentally refined, well formed, morally regulated healthy woman, we stand in the presence of greatness, in the presence of the highest type of gift to mankind from God. But we will not here close our senses to the human defacements that mar female ideals. I once heard a zealous minister of the Gospel in the pulpit exclaim: "The most priceless gift from God to man on earth is the devoted love of woman!" That appreciative minister doubtless was exceptionally favored in the person of his wife. But for the enlightenment of the wider world he might have added: "If she be sexually sani-

tary!" Too many attractively appearing women who captivate the desires of men, draw them to the supposed charms of the intimacies of marriage, but do not long hold them in endearing admiration because of unsanitary or uncleanly habit of sexual equipment—mainly through negligence or indifference after marriage. It is a terrible subject to approach, but for success in matrimonial life woman should face her personal physical situation as regards her sexual connubial relations. Many hopeful marriages presently prove failures. No difference how high her mental and moral status may range, if the woman will intelligently comprehend her most delicate situation as a lady should, and discovers that her sexual odors are rank and persistent, she may realize that she is not habitually tidy sufficient to hold the exalted esteem of a man of esthetic tastes and cultivaion. Through her hidden neglect to herself and husband she must expect to become a more or less negligible asset in the endearments of connubial relations. It is not always pure gold that burnishes the surface. I knew a Southern editor who, after two years of discomfiture, demanded and obtained a divorce from quite a gifted woman because she allowed herself to harbor a repulsive odor which daily ablutions and douches might have comfortably obviated.

Everybody seems to understand that the marriage compact between man and woman includes mutual privilege of sexual intercourse as love's sacred consummation of completed union. Nothing under heaven, therefore, should be more dainty and pure in physical contact as emblematic of the spiritual union represented by responsive conjunction. Disillusion is the pathetic crumbling to pieces of the ideal goddess to whom man joyously yielded his heart and admiration. If the daughter of Eve be considerately wise, she will not venture to disperse an ardent admirer's ideal by mere negligence of staling vulvar and vaginal secretions. "No, sir!" exclaimed a disappointed man of tidy habits to me. "No, sir! I revolt at once! I don't like her body smell! I'll never stomach it!" Even in civilization there are women who nurse repugnance to refreshing ablutions and douche even when the festering taint of a closing-out menstrual discharge lingers in her parts—or even when a haunting leucorrhea infests her receptions to ardent husband. Catarrhal vaginas are natural sequels of unsanitary habits. Pruritis vulvae gathers infection from lack of local hygiene. Eliminate pollution everywhere. If civilized woman trains herself to wash her mouth, cleanse her teeth night and morning, use a purifying gargle for phlegmy throat, why should she not incorporate into the devotions of her personal religion the adornment of genital ablutions? The intimacies ordained by marriage disclose every unsanctified shrine of love's embracing worship.

As physician, repeatedly have I been consulted by disaffected husbands and wives regarding suspicious irritations, soreness, discharges that involved the genital organs of both. Each has begun to question the fidelity of the other. In several instances the disquiet was settled by explaining the injury to the male organ from contact with non-specific vaginal impurity resulting from mere neglect on the part of many virtuous women—and again from the mistake of copulation too near to the the periodic menstrual finish without first cleansing the vaginal surface with sanitary douche or irrigation. A fifteen-minute quiet talk on the rightness of daily sanitary attention to the sexual endowment, as prepared by the Creator for human care, promptly restored mutual peace of mind and planted new thoughts in regard to the way of health and happiness in marriage. Prior to resorting to the divorce court for bill of separation, a considerate husband and wife, church members in regular standing, resolved to come together to my office for conference. After stating the occasion of their call, I examined both in the presence of each other. Previous to marriage neither entertained slightest doubt of the other's moral rectitude. But now the fangs of suspicion and counter-criminations were gnawing away connubial faith. Neither one had discovered in the other any direct evidence of outside favors. My local inspections revealed that both were moderately sore—the woman most so—and she most annoyed with discharge. Man and woman affirmed to each other's faces in my presence that nothing like this condition had ever been experienced before marriage—and that neither had ever been touched sexually except by each other. Led by my investigation the wife innocently testified that she had been so modestly raised that she never parted the lips of her privates to bathe inside, and that she had never used a syringe to cleanse the vagina in her life. The diagnosis was self-established. Innocent because of inadequate knowledge. They were at once informed of the uncanny results of stale secretions when harbored in woman's sexual organs, and especially aggravated monthly by degenerate menstrual material that clung to her parts unless dislodged and cleared away by thorough vaginal ablutions with warm water administered gently with syringe. That the certainty with which delayed fermenting discharges in the female were prone to irritate and inflame the organ of the husband who came into immediate contact by the natural act of copulation. That the only wrong-doing sprang from innocently overlooking sanitary needs for the protection of man and woman in the closest intimacies they could realize. I prescribed a simple compound antiseptic powder of boracic acid, salicylate of soda and refined borax, a heaped teaspoonful dissolved in each pint of water used for inter-labial bathing and for vaginal douche with fountain syringe twice daily. The husband to employ similar solution for his parts. They were dismissed to the drug store gladdened. The trouble between them soon was ended.

Before passing from this point let me refer to a more delicate instance. A few years ago, in the hot month of June, I came in charge of the case of a beautiful young woman not out of her teens, of highly respectable family. She was physically and mentally prostrated, neurasthenic to verge of hysteria, had irregularity of heart action, constant discomfort in lower abdomen, disrelish for food, spells of dread that she was about to die. Encouraged by her worried mother, she submitted herself for private examination. I found the nymphae and field of entire vestibule corroded and coated with stale sebacious exude. The clitoris and nymphae were particularly inflamed. The vaginal aperture quite nearly shut off by the hymen. I felt certain the entire vaginal tube was in state of impurity and congestive hyperesthesia. The opening for escape of menses barely discerned. She had been taught to avoid touching her privates. Had never realized the hygienic importance of a daily cleansing of the vulva and parted labia of the external genitals. I began her relief by spraying and mopping

away the sebacious accumulations with mild antiseptic wash. Young and socially single, I aimed to scrupulously preserve intact the obstructing hymen. Gently dilated its curve beneath orifice of urethra by introduction, day by day, of soft catheter less than one-eighth inch in diameter, to which I adjusted the nozzle of an elastic ball hand syringe for sensitive control. With this could lave and purify the vagina to full depth until healed. Thin fibre of cotton, surfaced on one side with mild salve upon which I dusted a blending of bismuth sub nit., applied to separate the external labiae from the internal lips, facilitated their healing. Later on the powder-puff with bismuth and stearate of zinc applied after bathing and drying. Nervines, tonics, appetisers, friendly sympathy, filled out the round of treatment. She learned the value of private ablutions, and suffered no relapse. Popular in young society, her company attentively sought by young men, in view of the undeveloped sexual unpreparedness, I seriously counseled her to not contemplate venturing the exigencies of marriage relations before reaching her twenty-third year of age. Too many youthful women heedlessly marry before physical development has had time to prepare them for its responsibilities and endurance.

Mince around the crust of the prevalent institution of marriage as we may politely affect to do, at the center of sexual attraction between man and woman abides the inspiring instinct or passion for sexual intercourse. Were this not so, sexual conjunction would not be so universally resorted to at once as sealing the civil contract and purpose of the marriage ceremony. Nevertheless, in majority of instances of modern years, pregnancy and children are more usually the product of mischance venture than the voluntary object of copulative gratification. Babes and young children vastly multiply cares that obtrude themselves between the preceding caresses of husband and wife. Too many ardent daughters of Eve who crave amusement and flattering times—too many unfitted men, indeed—notwithstanding rosy anticipations prior to marriage presently find that responsible relation unexpectedly prosy and vexatious. What should have proved the sweetest home relation in the world is too often regretfully spoiled by the wither of ignorance, by the browbeat of stoic indifference. If the daily newspaper reports are thoughtfully studied, it is in startling evidence that phenominal unrest is churning the waves of marital relations these modern days. Young man and young woman in romantic mood, meet at shore or elsewhere, are intoxicated with external pleasantries, in an hour's acquaintance become engaged for marriage, with palpitating anticipations they unite in copulative relations which almost immediately cool their effervescent enthusiasm, leaving them to gradually realize the bitterness of lack of sexual adaptation. The buzzard of discontent broods over the horizon of their future. Man on his mistaken part has been a ready candidate for special enjoyments. Willing woman, on her part, with defective development, discovers that she has "been used" to that end, but found little compensation in enjoyment. The man on his part has been a selfish blunderer. The woman on her part, with defective skill of her own, has endured a raking that stamps her lot as that of a physical convenience. The expanding blossom of love lies motionless, crushed in shame beneath the rights of bonds. If the man has had other and more responsive experience, he begins to draw pictures of contrast. If the woman has preserved her maiden virtue, in ignorance and innocence she hopefully grasps for a rag of consolation in the childish supposition that her experience must of course be like that of women in general, and reluctantly submits herself to the supposed necessity of trying to make the best of the situation.

But henceforth the woman begins by artifice to shun masculine intrusion. She feigns to be already asleep, with her back towards his customary place, when he retires to bed. Alert, she softly rises in the morning before he wakes. He finds himself sexually postponed by the significant intervention of a napkin at the well noted recurrences of his desires. She shrinks whenever she can from the unrelished contact. She shudders at the proneness to pregnancy and at the toilsome cares of unbargained-for motherhood where her love and trust had led her life into the trail of perpetual anxiety. In state of retaliating vexation the man ventures the welcome embrace of a normally developed woman. He stumbles into the alluring satisfaction of responsive and ardent adaptation. Mushrooms of distrust and jealousy spring into evidence during a murky night that delays him from home. Reproach and criminations begin to jar the domestic atmosphere. Eventually a divorce court loosens the misfit tie with bill of separation. What was the matter? The woman was not adequately developed for the bungling requirements and rude manner of the man to whom she had been joined by form of law. The man lacked ethical skill and consideration in his method with the woman whose capacities for enjoyment and contentment he otherwise might delicately have cultivated for fulfilment of happiness to both.

There is another phase of matrimonial unrest. Unexpected illness follows the rose and myrtle ceremony. The serenity and joy of union is disturbed by visitations of the physician. Nervines must be swallowed for irritated nerves. We prescribe sedatives for frayed edges of unwonted excitements. Digestives are laid out for flustered stomachs. The button is pressed on a range of tonics for the revival of jaded strength and clouded spirits. The tendency to repinings must be consoled. The ordeal of child-birth must be faced. Tragic deliveries with heavy long-handled forceps resorted to. Inhuman lacerations caused thereby must be repaired with cruel needle and sutures but never restored. The remainder of life maimed as sequence for what had been supposed at start was the beacon of human love between the sexes. And what of too many of the toilsome deliveries? Children born to perhaps a heritage of nervous and mental deformity, perhaps to the agitations of writhing convulsions—because of excessive pursuit by the husband for sexual orgasms while the child was in its stage of uterine development. No wonder there are women, in all planes of life, who elect to separate from men on account of such hardships of experience.

The bustling man, whether a commander of riches or a hustler for weekly salary, is often grossly material in his estimate of the act of copulation with woman. He is prone to deal with her as with a machine—as he would deal with a corn-sheller, where he can thrust the lusty ear into the hopper and the contrivance must grind the grain from the cob by mechanical operation. Man seeks woman for wife. He charms her imagination with plausible promises. He will actually work hard to see her comfortably provided for and housed as helpmate. He will laboriously apply mind and strength to master

business conditions or problems of science. But who among men as studiously apply thought to the mysterious sexual gift he has obtained in the person he has married? Many times the analysis has challenged my consideration along the line of my long professional service of families. It has been made clear to me that with possession, so many men grow persistent and abrupt. They aim to get, rather than to contribute, by the reservation of appreciative self-denial. An illustration may serve the purpose of a sermon. A young wife for whom I had delivered three children, each at interval of about eighteen months, innocently begged me to give her something that would prevent her from having to be so often in the family way. She pleaded that she could not repulse her husband, had no soreness to interfere, but never experienced any pleasant sensation in cohabiting—did not know what it was like as certain other women had pretended to know. Another young wife who had become the mother of three in less than four years of marriage affirmed that every day was a day of dread of the night, because she had never found any pleasure in her husband's tiresome frequency of sexual embrace. An intelligent lady, referring to marriage experience, frankly stated she had accommodated her husband two years before "any feeling" came to her; and after that but seldom found it pleasant,—but that a few years after her husband's death she ventured a new experience, and found that the pleasure of sexual intercourse was "the greatest happiness in life—it was all in the way it was done!" Another, wife of fifteen years, mother of one child, delivered when mother was in unconscious state: "I hear some women talk about what they call pleasure of intercourse. I know nothing about it, for never have had it. Detest that whole business of married life! It's disgusting in my estimation! All a husband does is to rush in, get finished, and go off to sleep!" Another wife: "In all my married life I've never found it the least pleasure—have no feeling for it—never have had. My husband don't believe in any loving caressing—says it's only waste of time. He wants what he wants when he wants it. I bear it with a groan—that's the end." An unusually intelligent lady—mother of four children: "So far as I am concerned, my husband has no occasion to come to you about disability for 'family duties.' My satisfactions in life have been more intellectual. I married, but have never cared for sexual attentions of any man." An intelligent wife who at, and for ten years after her marriage, was sexually frigid, mentally and often with disconcerting words, detesting the obtrusions of intercourse by her husband, at length, after he had made a physiological study of the discomfitting situation, was surprised to find herself a warm and willing partner in the act. On expressing his congratulations, the grateful husband received this curt reply: "Well, you never used to make me want it!" Another daughter of Eve who had been taught the brighter side of marital relations. The crisp reproof to the blundering, short-sighted husband to whom she had come with virgin continence, should impress the understanding of every man who lacks ethical fitness for securing to his marital mate her equal share in all the satisfactions he seeks for himself.

Apostle Paul, to the Corinthians, says: "Let the husband render unto the wife due benevolence—defraud ye not one the other." Men take too little heed in their marital relations—too many wives are defrauded in their relation of wifehood. The normal share of sexual compensation, as contemplated by woman's organization, is too frequently not realized for lack of "due benevolence" on the part of man. Woman yields to man because taught it is expected of her, is her duty. Man takes advantage of his opportunity, "uses her" for his personal gratification, with little consideration of the manly benevolence due to the fact of her submission. More men break up from excess than from generous delay. Retained semen does not shorten life. Frequency is but the dalliance of habit encouraged by opportunity. Apathy on the part of woman may be cured by wise moderation, by sanitary encouragement,—but is never relieved by frayed, outworn condition of nerves. For promotion of social happiness in civil society there should be a special class in prominent institutions of learning for physiological instruction in the science and success of marriage adaptations. The lecture should be scheduled on the course of Social Economy, repeated on alternate days for appropriate admission of each sex by itself, of all who are or expect to be candidates for marriage relations in life. "Man know thyself"—Woman know thyself.

It has repeatedly fallen to my professional lot to be consulted by newly married men in regard to apathy and lack of enjoyment confessed by their wives. Hurts of spirit and melancholly forebodings are natural products of discomfited relations. The bloom of mutuality is frosted after the ceremony intended to make of the twain one flesh by sexual conjunction. To all such anxious inquirers I endeavor to frame my counsel in accessible polite phrase: Encourage personal endearments. Extend the gentlest courtesies of courtship to the woman's sexual parts now so intimately interested. The sexual system is especially equipped and ordained to enhance mutual pleasure only by the gentlest means. You now live to love and to yield equally—share for share. Avoid all abruptness by the introductory organ. Loiter at the location of the sensitive clitoris at the very entrance of the vulva. Linger at the vestibule door-way to the vaginal channel until the woman's amative responses warm to desire and proffer welcome of gentle pressure to the deeper vaginal parts with a sense of pleasure. Remain gentle! gentle- If the trustful woman is belated in the function of sexual reciprocity, such considerate treatment will naturally develop her capacities for enjoyment. But mark you, my Sir! If the man is at all large or heavy in body, let him not allow his weight to press upon the woman's abdomen, or crush it in the act, if he has any wish for her to feel pleasure. His oppressive weight strangles her chance. But let the man and woman meet in the freedom of a side position, with the man's weight thus supported by itself. Great minds have great thoughts. Woman is the product of God's thought. The Lord marvellously endowed the normal woman for exquisite union with man in the bonds of love. Pleasure offers the invitation. Procreation is the possible ultimate. The avenues to that end on woman's part are richly provided—if normal. The modestly erectile clitoris to meet the male organ at the upper entrance—the sensitive nymphae that curtain the sides of the broadened expanse of contact—the bulbs of the vestibulum to enhance closeness of touch—the Bartholinian glands responsive with lubricating moisture—the constrictor muscle of the vagina which in health clings about the engaging male—the contractile intermuscular sheath of the vagina which, in response, adjusts the vagina to the volume of erect organ—the

rugae of vaginal surface which multiply the intaking pressure of pleasure—the grasping uterine os in the embracing ecstasy of orgasm. Who but the Almighty could so plan and endow a mate for man! Then why should he not tenderly prize her?—see that she receives her full share of any delight that man seeks through her for his own gratification?—even chivalrously accord her first preference in the securement of personal satisfactions after desire has been awakened—and that without casting upon her unspared his seed undesired because of overwork and worry of excessive child-bearing. She should not be reduced to the slavish position of being kept mainly to administer to man's physical needs and carnal desires. We then would have fewer headaches, backaches, fretted nerves, broken constitutions and motherless families to prescribe for—while more cheerfulness, more peace and beauty of health would brighten the homes of husbands.

It is doubtless both proper and right for a respectably preserved man to nurse or cherish considerate regard for the sexual or virile endowment of his being. He has no moral right to suppress to impotence the amative instincts of his nature. St. Paul and many other wise men are safe authorities on that vital problem. No living man has been responsible for the nature bestowed upon him for regulation and results. But his virility has no claim to the abuse that amounts to lust. It becomes beastly when it dominates and breaks the tender vessel used for his gratification. I personally know of a case in recent years where, when the man proposed to take an indulgence, he first drove a mile to town and sent out a doctor to inject hypodermics of morphia into his wife's arm to enable her to endure the act—and by late bedtime the husband would again report in town for the doctor to go out to administer another hypodermic to carry that wife over the effects of the coition. What must have been the physical situation of that wife next day? A Pennsylvania German, justice of the peace in a mining town, told me, in reference to marriage, that when he wanted his wife's sexual service, if she was not ready to give it, he "would either lick her or turn her out!" What about "white slavery?" A German wife, mother of five children, who had grown weary of closely repeated child-bearing, was ill of rheumatism. It was winter. I found her lying upon a lounge in a cold room, with but a single quilt over her for cover. She complained to me that because she couldn't "stand her man any more"—that he was so long when he wanted she couldn't bear it—in anger he had kicked her out of her comfortable bed, and resentfully she remained for two nights as I found her—and now was sick. I counseled that she at once return to her bed, that she was too valuable a home-keeper for her husband to lose, that he was a good provider for their family, that his sudden anger was but temporary impulse because of her resistance, that she endeavor to try to be patient with him rather than induce him to stray abroad and spend his money with other and younger women, which would render her yet more unhappy than she was already. With her recovery she grew entirely reconciled. In my more early practice, in rural district, I became the medical attendant of the little gray-growing wife of a man engaged in small farming. She had raised a family, part of whom had attained adult life. Within the last two years she had suffered bruises and been so persistently maltreated that she could not recover from her illness. From a thrifty tiller of the soil her husband had descended to the level of a drunken sot. A week prior to her death she unfolded her secret trouble which began after the birth of her youngest child, doubtless through the chill of "change of life." In mistaken ignorance of the occasion of her sexual aversion, she had decided to give birth to no more children, and therefore declined further copulation. At once her disconcerted husband, who sought no sexual alternative for his physical habit, became a demon to drink, and neglected all other affairs. He spent his time between jaunting to town on horseback for his jug of whiskey, jealously watching his weary wife, quarreling and abusing her. He would come home nights, steal up to the sleeping room, drag her out of bed, beat her, compel her to lie upon the floor while he slept off his drunk alone in the bed. Love between them was completely murdered and he practically murdered his faithful wife. A few months after her decease he fell off a bench in the yard—expired in a fit of apoplexy—to complete the tragedy of sexual disaffection. Beneath the hidden histories of most divorces, elopements with other men, with other women, appalling suicides and murders, there had first sprung the bitter waters of sexual disaffections. An unusually attractive, beautiful young wife, who had married a widower considerably her elder, was ill. When called to her she was writhing in violent convulsions. After that recovery, I was surprised that her spasms recurred at estimated intervals. After our acquaintance matured, she lifted the curtain to her affliction. Told me that though she respected her husband, her nature was not adapted to him. Had discovered this presently after marriage. Though herself of amorous inclination, the sexual tests of her husband were so tedious and slow her nerves could not bear them. When she had missed her siege of spasms for a few months, she confessed that she knew there was very remarkable difference in men. That she had reciprocated the friendship of a certain ex-general, "sweet as a peach," who admired her, and if she could meet him at the crisis of certain times, instead of submitting to her husband, it was lovely and soothing to her nervous tension. Recognized as a lady in excellent standing, performing good and benevolent acts wherever she could, but guarding her sensitive nerves by nature's relief, this woman by many years outlived her three straighter-laced married sisters. Who of liberal intelligence will be her judge or first cast the stone at her? Christ bent and wrote upon the ground with his finger while the woman's guilty accusers withdrew from the Divine presence.

In the liturgy of Creation, in mastering love and in law, marriage and copulation spell the same mood and tense of human existence. They are inseparable adjuncts of the social structure of civilization. They are ordained to abide so long as a living man and living woman with normal virile inspiration inhabit the earth. But higher and more refined planes of knowledge and wisdom are essential for unerring adaptation of the sexual mission in the human family. Provision for the potency of the male is perfect when not misapplied. Its endurance runs parallel with the ages. The passion of sexual desire is planted by the Almighty Maker deep and strong in the vitality of man. He only needs learn how to hold it in sacred regard and management as the primal medium for mutual consolation and benefit of woman and of himself during natural life, also for the advantages due to posterity.

An experienced authoress lately puts it this sensible way:

"The body that never knows carnal desires,
The heart that to passion is always a stranger,
Is merely a furnace with unlighted fires;
It sends forth no warmth while it threatens no danger.
But who wants to shiver in cold safety there?
Touch flame to the fuel! then watch it with care.
Those wild, fierce emotions that trouble your soul
Are sparks from the great source of passion and power;
Throne reason above them, and give it control,
And turn into blessing this dangerous dower.
By lightnings unguided destruction is hurled,
But chained and directed they gladden the world."

Frigidity or lack of sexual cordiality for copulation in woman is far too prevalent for her reasonable comfort in marriage. After marriage it seriously bars the gates of reciprocal satisfactions between man and wife. Its causes are usually hidden beneath the posies of romance, are musically "slurred" over until revealed by the experience of physiological test. On investigating the conditions under which sexual frigidity discolors woman's marital animation, I have found first that she lacked ardor of temperament for close physical union with the man. She marries for various reasons, sometimes no better than romantic caprice; with no magnet of settled love, she marries to "spite" the opposition of parents or interfering friends; she accepts marriage for "a home"; she ventures even for the whim of escaping the conservative appellation—"old maid." Again, in nearly all cases of sexual frigidity, the clitoris was in virgin stage of non-development—markedly defective in amative sensibility. There was usually a smooth or flacid vaginal surface because of deficiency of stimulating rugae to engage the presence of the male organ. Frequently there existed a relaxed and slippery condition incident to a degenerate chronic leucorrhea. Disinclination was also traceable to scrofulous relaxation and catarrhal discharge from the uterus. Nothing but negative ardor can naturally attend any combination of these radical impediments to satisfactory coition. Constitutional and local depressants like these rob pleasure of its normal zest, weaken the welcome of acceptance. Furthermore, the disenchanting fear of pregnancy precludes cordiality of embrace when every moment trembles with dread.

For the relief of this large class of cases, it goes without saying, the woman is in deplorable need of intelligent professional treatment. The man should accomplish himself in gentleness, forbearance, self-denying cautions that afford protection to the woman from the physiological vengeance of man's gratified libido. These pages abound in helpful suggestions for improving the social ailments that afflict humanity. Whoever can assist to enhance the happiness of the missmated world becomes a public benefactor.

1726 North Twenty-second Street.

Melaena Neonatorum.—Dr. S. W. Lambert relates the case that had nearly proved to be fatal when transfusion of blood from the father's veins accomplished a rapid cure (Medical Record). The most satisfactory theory to which we have yet arrived is that of lesions of the capillary blood vessels, the cause of which may be an infection.

HEREDITARY SYPHILIS.*

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AT the April meeting of this Society, in the discussion of a case of infantile syphilis reported by me, there was a difference of opinion as to whether syphilis could be transmitted to the third generation without re-infection in the second generation.

Further thought on this question led me to investigate the subject of hereditary syphilis. No attempt will be made to give an exhaustive account of my experience and reading, and I will begin with a brief history of a syphilitic family under my observation for some years.

My predecessor in the care of this family dying suddenly could not give me any data as to the origin of the disease in this family, but from other sources it appears that the father contracted syphilis after his marriage, and had been under treatment for some time prior to the death of my predecessor. There is no evidence of syphilis in the mother.

My attention was first called to the youngest child, a boy then about six years old. He had suppurating, enlarged cervical lymphatic glands, was anaemic, poorly nourished, and during the next two years had frequent attacks of pharyngitis, tonsillitis, suppuration of septum nasi, leaving a permanent hole through it, followed by some falling in of the bridge of the nose. Later he had joint disease, I believe, synovitis of knee. Several operations were done to remove the diseased glands in which destruction had gone so far there was no hope of healing, and for two or three years he was under anti-syphilitic treatment with mercury and potassium iodide. His frontal bones were particularly prominent, and his teeth were poor, but not the characteristic Hutchinson teeth. At one time he became almost blind, but this symptom disappeared. He has recovered and has had no anti-syphilitic treatment for ten years. He appears to be in excellent health at the present time.

Oldest daughter, now over 30, has never presented any specific symptoms, except that she has consulted me for frontal headaches, which have been obstinate without much permanent relief from ordinary cephalagic treatment.

The next daughter is 27. She presented no symptoms of any disease except an occasional tonsillitis until after her marriage, when she was treated by me for acute articular rheumatism, which yielded to treatment by the salicylates in a week or ten days. She had one healthy baby at that time, and this child, now five or six years old, is still healthy and strong. One year and a half ago she brought me her syphilitic child four months old for treatment, this child dying two weeks after, and told me her previous baby, the second, had died of a similar disease when about the same age, and that she was then pregnant for the fourth time. This fourth pregnancy resulted in abortion a few months after I last saw her. During all this time there have been no symptoms of disease in her except what her doctor called the after-birth so firmly adherent to uterus that it had to be removed by him at the last con-

* Read before the Hospital Graduates Club, Brooklyn, February 26, 1909.

finement. Last autumn she wrote me that she was again pregnant, and asked me what could be done to prevent a recurrence of abortion, adherent placenta and disease, in her new offspring. On my advice she consulted the physician nearest her, but she informed me that he refused to do anything because he found no disease to treat. I then refused to treat her unless she could positively assure me, as far as she knew, that neither she nor her husband had ever acquired syphilis. She informed me that her husband had been assured by his physician that he had never had syphilis. There is no reason to suspect that this woman ever acquired syphilis, but we feel morally certain the disease is in her family. She has been some months now under antisyphilitic treatment, and as yet there are no unnatural symptoms interfering with the course of her present pregnancy.

Mother of these daughters and boy further says she has had two miscarriages, lost two children with diphtheria, and one boy with heart disease due to alcoholism. There seems to be no doubt about the presence of hereditary syphilis in this family.

In regard to third generation syphilis shall we believe in Tarnowsi "syphilis binaria" no transmission to third generation unless freshly acquired to second generation, or with De Amicis that syphilis can appear in the third generation without being acquired in second generation, and who has traced third generation syphilis through five families?

The symptoms in hereditary syphilis do not differ from those of acquired form, with omission of the primary forms, often with a mixture of secondary and tertiary manifestations, but of these certain symptoms appear more comon in hereditary than in acquired form.

During a six months' stay at the Frauenclinik in Munich some years ago, under the able instruction of Prof Winkel, we were required to examine and report on the condition of every placenta we delivered, and many times I wondered what caused the unnatural infiltrations with thickened masses of tissue, and with the presence of gritty calcareous material scattered through them. With no symptoms of disease present it was rather difficult to prove that such placental disease was specific, and yet we know that such changes in placenta are caused by syphilis. We often hear of slow delivery of placenta due to adherence to uterine wall. May it not be possible in these cases where the placenta has to be removed artificially that the primary cause producing placental changes causing this adherence is syphilis? In the case of the second daughter in the family above mentioned I have thought that the disease was located here.

It is stated by some, however, that an adherent placenta acts as a safeguard to prevent transmission of syphilis, and that this is the reason why some women known to be syphilitic nevertheless give birth to healthy children.

We shall not attempt here to advance theories as to how the placenta may act as a filter to keep away the syphilitic germs from growing foetus, or why women should alternate with healthy and diseased children, or how one woman should bear twins, one healthy, the other syphilitic.

I believe it correct to state that hereditary syphilitic symptoms usually appear early in life, within a few weeks or months, but it is not uncommon not to have symptoms until the individual is 20 to 25 years of age, and perhaps later. So if a child of syphilitic parents appears during the first few years of life with no symptoms of syphilis, we cannot be sure that the disease may not appear later.

The ordinary medicinal treatment for hereditary syphilis is the same as for the later stages of the acquired form, but the real management of the cure is in using methods to prevent the spread of this contagious disease.

404 Clinton St., Brooklyn, N Y.

A Chinese Triumvirate.—The doctor, dentist, and barber are powerful factors in Chinese civilization, states the Medical Record. Once a week the Chinaman visits the barber for a general overhauling. First the head and face are shaved; then the ears are scraped and cleansed with a small brush made of duck's hair; third, the upper and lower eyelids are scraped with a dull edged knife, all granulations being smoothed away, after which a salt solution is applied with a duck's hair brush. It is for this latter reason that so much blindness is found in China. No antiseptic precautions whatever are taken; all instruments are held in the operator's hand when not used. Finally the patient's back is massaged; and after paying a fee of three cents (and no tip) he leaves the shop feeling clean outside. He next consults the physician. After undergoing the usual examination (a form of military inspection) the case is diagnosed and treated, unless a devil happens to jump down the patient's throat. For this the only remedy that will serve is the setting off of one hundred firecrackers, and a daily visit to the joss house. This done he receives the usual pills for those vacated by the devil; these may consist of spotted rhinoceros horn—a wonderful cure for intestinal troubles; these horns come from southern China and in the Singapore market a single specimen will bring $25. Tiger bones, ground and mixed with Chinese wine make a valued blood tonic much used in northern China among all classes; the receipt is held by a Shanghai firm, which has become very wealthy upon it. Old deer horns are boiled down to make the medicinal glue which binds the fifty ingredients composing the average Chinese pills; in these one may get anything from a pint of gunpowder to cobra tail dust. Of equal medicinal efficiency are three high-grade tiger remedies—the eyeball, liver and blood. The genuine tiger eyeball can be prescribed only for the very wealthy Chinese; similarly the liver, dried and reduced to a powder, is worth its weight in gold; tiger blood, evaporated to a solid at a high temperature is believed by Asiatics to transform a craven into a hero. Finally the dentist is looked up; this professional will be found on any street corner in all large Chinese cities. He is very impressive by reason of his seriousness; always reading and thinking of his collection of some 2,000 teeth on a table, and a few bottles of some secret drugs said to contain the moisture of the inner side of an old coffin collected after a ten years' burial. The dentist in China is called a boxer; for he is supposed to have great strength in his arms and hands.

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DISEASE AND HISTORY.

THE influence of disease upon the destinies of peoples almost never receives the attention due this subject from historians. Not until recently has Jones of Cambridge shown how the malaria which Alexander's soldiers brought back with them from India affected most banefully the Greek nationality. Smallpox, cholera, tuberculosis and the bubonic plague have all vitally changed the course of history; yet historic accounts of these diseases are of the meagerest, as any colleague will find who is interested to look up the subject.

Warburton, however, gives an exceptionally good account of the influence of The Black Death. This pestilence swept over England in 1348-49, turned all the gay prosperity of that nation into mourning and brought France to the very brink of ruin. It is well observed that the outbreak of this plague "has been left comparatively in the background by contemporary historians; but it is undoubtedly the central fact of the reign of Edward III., and of the fourteenth century, and, in the opinion of some writers, the most important economic fact in modern history." Among its consequences were an immense advance in the social condition of the working classes, owing to the scarcity of labor; and consequent increase in its value as a commodity; the substitution of tenant farming for landlord occupation; and a "strike" of fifty years duration, which culminated in the Wat Tyler rebellion of the following reign and which, though then cruelly and treacherously put down, resulted eventually in the emancipation of the English peasantry.

All the most devastating epidemics that have visited Europe have had their cradle in the Far East. Tidings of the ravages of this particular bubonic plague in Central Asia had reached England as far back as 1333; but the western peoples thought little of it as long as it was talked of only as one of the many scourges of imperfectly known and half barbarous nations. Constantinople was then, as now, the great frontier city between European and Asiatic civilization, and through it flowed one of the three principal tides of Oriental traffic. Thither in 1347 came this blight along with the caravans laden with Asiatic produce, and followed the westward course of commerce by easy stages along the shores and islands of the Mediterranean until finally it reached the uttermost northwestern boundary of Europe, not sparing Iceland and even leaping over to Greenland (where it probably extirpated the European colony), and returning by Norway and Sweden through Russia.

In the light of our present day knowledge of the *Bacillus pestis*, and of its transmittor the flea, it were interesting to note the etiological theories extant in Warburton's time. In Asia, on the shores of the Levant and in Egypt, he found, the plague was endemic, having been as it were domesticated there by the lazy, filthy and fatalistic habits of the people. "Its specific causes are as much unknown as its original seat. The opinion of the time and some modern authorities agree in connecting its appearance with contemporary physical phemonena of a very remarkable kind; but it would seem as if these phenomena were of too local a character to account for a pestilence which spread over a whole continent." Parching droughts were succeeded by convulsions of the earth and crackings of its surface, from which a fetid and poisonous vapor was projected into the atmosphere, the corruption of which was afterward increased by malarious exhalations from swamps caused by incessant deluges of rain. To the panic-struck imagination of the people the Black Death seemed to be advancing to their destruction in the palpable form of a "thick, stinking mist."

In England by far the most memorable results of the Black Death were its social and economic effects. "Many villages and hamlets were desolated, without a house being left in them, all those who dwelt in them being dead." In the rural districts the pestilence spared not even the brute; the carcasses of sheep, horses and oxen lay putrefying in the fields, untouched by dogs or birds of prey. London was for a time "alive with death," and brisk with funerals. Soon there were too few left alive to bury the dead. One-half the population is said to have perished. The immediate consequence was an enormous increase in the value of labor, and a corresponding depreciation in the value of land. Landlords excused their tenants' rents for one, two or three years, lest they should desert their holdings and leave them uncultivated on their owners' hands. Wages

were so high as to swallow up the farmers' profit, and it frequently became a question whether it would be more ruinous to leave the crops ungathered or to comply with the extravagant demands of the laborers.

THE DANGER OF CERTAIN FORMS OF PHILANTHROPY TO THE IMMATURE PHILANTHROPIST.

IN connection with the Sigel case, we have touched upon the need of caution in allowing persons of tender age, especially girls, to take too active a part in certain phases of philanthropy. The enthusiasm and moral standing of leaders in such work and the very natural assumption that good deeds not only bring their own reward, but are free from evil accessories, make it necessary that some one should utter a word of warning and no one is so well fitted to appreciate the insidious danger or tactfully and influentially to suggest the necessity of caution, as the physician.

Fortunately, it is very rarely that a horrible tragedy discloses that the mantle of charity or religion may hide a loathsome septic process. But the frequency with which murder, a fire or some accident serves to reveal a social tragedy which would otherwise not have been suggested, leads even one who is not a cynic to ask how many cases there are like the Sigel case, but without a murder.

Looking back over many years of practice, we are struck with the frequency with which girls have ascribed their fall very directly to the church choir, the young people's society, and the delegation of duties by the Sunday school. In some few cases, there has been a foul disregard of honor by men of mature years and of a position which ought to insure absolute confidence. For the most part, there has been the always-to-be-feared result of propinquity of the sexes in private. We wish parents could be made to realize that this danger is not necessarily eliminated because the girl is going to or from a religious meeting or is hanging wreaths or practising an anthem for some social or religious occasion connected with the church work.

So far from there being any immunity against eroticism conferred by religious emotion, the two emotions are dangerously allied. Indeed, there is good scientific authority for believing that religious conceptions are evolved originally from those of sexuality, and, in most primitive religions and even the elaborate mythologies, the sexual element is strongly evident. In our opinion, based, as intimated, on actual experience, the minister should pause in his invectives against the dangers of the theatre and the ball, to apply the motto: "Circumspice."

The close relationship of young persons of either sex, but, obviously, girls in particular, with the dependent classes in the dispensing of charity and in the social ways that have recently become popular, is also a matter that requires careful regulation. In four years' work of a well-known city physician, he was forced to the conclusion that poverty is usually close to the borderline of drunkenness, shiftlessness, irresponsibility and actual crime. The deserving poor seldom seek, and usually elude the almoner of any form of charity. The innocent indecency of certain recipients of charity, the ignorance of the practical dangers of infection, whether in a bacteriologic or moral sense, the lack of appreciation of the carefully guarded life which most persons of good standing desire their girls to lead, render it inadvisable for the latter to act as visitors.

It is unnecessary and it would be too painful to dwell on the fortunately rare examples of gross disaster to young girls acting as angels of mercy in one capacity or another. Let us rather cite some of the minor dangers to which they are subjected. One of our charity patients, a perfectly respectable married woman of the lower class, allowed a school girl of fifteen to act as nurse after confinement. Another could see no impropriety in giving clinical demonstrations of a diseased condition which was, to say the least, loathsome and indelicate. Another undressed a boy of thirteen before an amateur dispenser of charity very little older. A teacher, with the best intentions in the world, and full of the spirit of the United States Constitution—and its Civil War amendments—encouraged her girls to dance with negro boys. A very young and pretty music teacher became interested in a burley negro with musical aspirations and, though he was married, he dedicated to her an extremely sentimental love song, both the music and words being of his own composition, the latter just failing to mention, while by a pun, suggesting her name. The acquaintance was undoubtedly entirely innocent on both sides, but the denouement made the benefactress ridiculous.

The class of society for which social settlements are organized cannot be expected always to stop at the point intended by the organizers. It is certainly logical to consider that a person deliberately seeking social acquaintance does so in good faith and that a social call should be returned. But we have known of social workers illogical enough to be embarrassed, even offended, at the return of a courtesy. Both boys and girls have had their philanthropic overtures construed as amatory advances. As to mesalliances occasionally contracted by either men or women engaged in social settlement work, it is difficult to discuss them without snobbishness. Doubtless, they are often genuinely wise, but they should be considered frankly, in advance, as possible and logical consequences.

Quite aside from the question of the relation of the sexes, it should be understood that practical philanthropy, whether of a religious or secular kind, must be made a matter of serious study. The amateur, occasional and temporary worker, lacks the necessary experience even if otherwise adapted to the work. He or she is likely to start in with a sentimental enthusiasm which courts imposition and gives the dependent class a means of living by its wits, which is just what systematic, far-sighted philanthropy wishes to avoid; and to leave it with a sense of disgust and an ignoring of the actual needs of the poor, so that, ultimately, the support of necessary charity is diminished.

TUBERCULOSIS AMONG NEW YORK STATE INDIANS.

THE May issue of the Bulletin of the New York State Department of Health, contains an interesting report on the sanitary condition of our reservations. On the seven reservations and in Oneida, there are, altogether, about 6,000 Indians in the State. This is about half the number estimated by pioneers of the seventeenth and eighteenth centuries. Contrary to the popular belief, the Indians are very far from being a vanishing race and while the eastern Indians have a moderate infusion of white blood, mostly dating back to the colonial period, the Indian population has preserved its racial features fairly well, especially in the West, and remains about as large as it was prior to the discovery of the continent by the white men, the reduction of the numbers in New York being due to wholesale emigrations, many years ago. With enforced peace and sanitary regulations, it is altogether likely that the Indian population will materially increase until it is gradually absorbed by intermarriage, whereas under prehistoric conditions war, famine, the absence of an artificial supply of milk and the rather low procreativeness, kept the population approximately stationary, so far as archaeologists and ethnologists can judge, for many centuries.

At present, for various reasons, accurate vital statistics are not available for the Indians, but the total death rate does not seem to be much greater than for the whites, allowing for the absence of immigration as a disturbing factor. Tuberculosis is, however, exceedingly prevalent and is believed to cause at least one-third of all deaths on the reservations. Tuberculosis probably did not exist before the white settlement of the continent, and is due almost entirely to bad sanitation and filthy habits of living, the Indians having lost the advantages of outdoor life and having failed to acquire the practical hygienic knowledge necessary for the protection of persons living a more or less artificial life.

Alcohol, except in the small quantities occasionally developed in sour berries, corn meal, etc., was entirely unknown in aboriginal times, excepting in the tropics, where pulque was manufactured with the assistance of salivary diastase. From the time of the first intercourse with Europeans, it has found favor with the Indians and is an important contributory factor in the development of tuberculosis.

The report contains one rather amusing error, the New York Indians being said to have formerly occupied tepees, whereas the very name of the Five Nations of Iroquois was The Long House, a figurative allusion to their customary dwelling of poles and bark.

As an illustration of the difficulty that will be experienced in the medical control of the Indians may be mentioned an anecdote of dispensary service on one of the reservations, a year or so ago. The attending physician was somewhat flattered at the popularity of a cough syrup which he had compounded. The Indians not only praised its efficacy, but came from a distance at the slightest evidence of a respiratory catarrh and asked for his special mixture. Stopping one day at an Indian cabin, he discovered the secret of its vogue; the family were at breakfast and were using the much vaunted syrup on griddle cakes.

PRACTICE AND THE LABORATORY.

ENCOURAGEMENT should be given the student to determine upon making his own examinations in pathology and bacteriology when he goes into practice; that he will himself use such means of diagnosis as are now too readily assumed to be the province only of the institutional laboratory. In large cities, of course, labor must be divided; and every one is grateful for the facilities furnished by the State, and for the services of the "County Bacteriologist." But in the communities in which the great majority of graduates will work, the technical examinations can be made by the clinicians as well. A laboratory outfit need not be expensive, except perhaps for a microtome. The microscope, of course, every physician must have—and should use; (not keeping it in a glass case and for the most conspicuous ornament in the waiting room, as a sort of scientific bluff).

There cannot be any more enjoyable and fascinating by-study or hobby, than the biologic field. It is not to depreciate the solid value of our great institutions to observe that studies in pathology and bacteriology, if well begun in college, can be pursued by those who have not the good fortune to enjoy institutional connections. Only the will for it is then necessary to do excellent

work in one's top floor back, or in the little house off the stable—or the garage.

When Koch's paper announcing his all-important discovery of the tubercle bacillus appeared in 1882, Trudeau, in Saranac, was but recovered from tuberculosis. This settlement comprised then a sawmill and a few guides huts; in winter it was most desolate, forty-two miles away from any railroad, the temperature often far below zero. Being without scientific training Trudeau was, during some visits to New York City, instructed by Dr. Prudden in the essential principles of bacteriology, and in how to stain the tubercle bacillus. Had the college curricula of his day included the courses which every institution now maintains, he would not have needed even that instruction. Then at Saranac Lake, with few other tools than his microscope, without access to a library, his only information on the subject Koch's paper, he rigged up a home-made thermostat, without regulating apparatus, and heated only by a small kerosene lamp. The water often turned to ice in his house (his wood stove was not sure to burn all night). For protection against violent changes in temperature he enclosed his thermostat in a series of wooden boxes, the doors of which could be opened or closed at will, according to the intensity of the cold. His guinea-pigs he kept in a hole under the ground, which was heated by a kerosene lamp, in the only spot in that lonely region where they would be likely to escape freezing at night. (They often did, notwithstanding.) Under such circumstances as these he obtained the tubercle bacillus in pure culture, being the second observer in America to do this; and with these cultures he repeated all of Koch's inoculation experiments.* This laboratory was burned to the ground; but was replaced by the present stone structure, in which the work produced by Trudeau and his associates is unexcelled throughout the scientific world. And Koch's epoch-making work was also begun, not in an institution, but in the Silesian village which was his home. Many instances of this kind can be cited.

Of course some laboratory work is now routine with every physician; most men now examine their own sputums and urines. But there are village practitioners who do much more than this; and their work is superb; examinations of stomach contents, of urinary sediments, of feces, of aspirated fluids, blood tests, plasmodium detections, diphtheria cultures and the like, are not beyond their scope.

Of course, in laboratory work, as at the bedside and elsewhere in practice, the physician will need consultation with the expert, whose whole time is given to such work; nevertheless in general he will require no more assistance than in routine cases of pneumonia, or nephritis or diabetes. But, it may be objected, all this takes time. The fledgling practitioner will have the time, alack. And if the clinician and the laboratory worker be thus combined in the individual, there will, we imagine, be less thought of opposition between these essentials to successful practice.

*Trudeau (E. L.): Tuberculosis Work at Saranac Lake; The First Annual Report of the Henry Phipps Institute.

A MEDICAL MISSIONARY.

THE auxiliary yawl Andrew J. McCosh, a memorial by Princeton men to the late Dr. McCosh, of New York City, was recently put in perfect trim for her long voyage to the Labrador Coast; the modern argonauts manning her were all Princeton men, mainly recruited from the class graduated this year, although so far back as 1900 was represented in the crew. Dr. McCosh, always a loyal alumnus, and the son of the former great president of his university, was greatly affectioned toward Dr. Grenfell, whose self-imposed destinies have lain among the Labrador fisher-folk; and the latter's achievements have often excited the admiration of young college men. So, when the question arose of a McCosh memorial, graduated and undergraduates alike took the presentation of a vessel named for him, and designed to further the work of the medical missionary, to be the most appripriate that could be conceived.

From New York the yawl made for New London; and, after the Harvard-Yale boat races proceeded up the coast, across the Gulf of St. Lawrence to Nova Scotia; and thence to Battle Harbor, Dr. Grenfell's headquarters. Who, in contemplating this gift and the manner and circumstances attending its presentation, shall say that lofty and humane sentiments are dead to this age and civilization.

And what are the things which Wilfred Thomas Grenfell, graduate of Oxford, physician-missionary to the fishermen of Labrador, and master of arts (Harvard, 1909), is achieving. We have from time to time noted them in these columns; and his recent book informs us of much else.* Starting out from his hospital mission at St. Anthony on Easter Sunday of last year, to answer a call for surgical help from a point sixty miles away, he crossed an arm of the sea in the hope of shortening his journey. But what was thought would be sustaining ice proved soft and treacherous; and his sledge went through and was lost. He and his eight dogs managed to establish themselves upon a small cake of ice—an ice pan. Night came; and with it the Arctic cold. Grenfell had then to take thought for his life; he was without furs and food, the kowatik containing them having gone with his sledge. In these desperate straits his course was clear enough; some among these dogs had

*Adrift on an Ice Pan. (Houghton, Mifflin & Co.)

to yield their hide and flesh; although "to a lover of his dogs, as every Christian man must be, each one had become almost as precious as a child to its mother." But on a piece of ice three miles from shore and pierced with cold and hunger, he proceeded to the inevitable. "I made a slip-knot, passed it over the first dog's head, tied it round my foot close to his neck, threw him on his back and stabbed him to the heart." Despite his care, the struggling creature bit him badly in the leg. "I suppose my numb hands prevented my holding his throat as I could ordinarily do. In this way I sacrificed two more large dogs. I envied them whose troubles were over so quickly." Their flesh nourished him; their hides kept him from freezing to death; the bones of their legs he lashed clumsily together for a staff upon which he hoisted a signal of distress.

Rescuers finally came when hope was flickering out. Our heroic colleague, shortly after recovering from frost bites and exhaustion, erected in St. Anthony's Hospital in Newfoundland a bronze tablet inscribed: "To the Memory of Three Noble Dogs, Moody, Watch and Spy, Whose Lives were Given for Mine on the Ice." And his brother put up another in his English home, adding: "Not one of them is forgotten before your Father which is in Heaven." "And this," declared the missionary-physician, "I most fully believe to be true." We leave it to theology to place the dogs in Dr. Grenfell's scheme of salvation, simply agreeing with this Homeric worker that starving men adrift on the ice do not spin syllogisms. But surely every one is glad for those bronze tablets. Lucky there were no anti-vivisectionists watching that ice pan.

SANATORIA FOR WORKINGMEN.

SEVERAL years ago a law was passed in New York State by which it became practically impossible to establish tuberculosis sanatoria within its borders; a new law has now, however, taken its place, by the terms of which the State Commissioner of Health and the local health officer in any given district are empowered—after having given a public hearing—to grant (or to withhold) consent to the erection of such an institution. The first application under this new law was made by the Brooklyn Central Labor Union, for permission to build a tuberculosis sanatorium on Long Island, near Medford, and about five miles from Patchogue. A year ago the local authorities refused permission to build this institution. The State Commissioner of Health, Dr. Eugene H. Porter, and Dr. C. A. Baker, the health officer of the town of Brookhaven, granted the application, having considered favorably: the character of the institution to be established; the responsibility of the petitioning persons or associations; and their ability to manage and finance it. The proposed site was approved as being at a considerable distance from any village, only a few houses being anywhere nearby.

It is peculiarly appropriate that labor organizations should establish sanatoria for their consumptive members. Some years ago Cornet of Berlin found that the workingman endangers his fellow workmen by tubercular infection more than he does the members of his own family. No doubt this observation has since required modification, by reason of improved factory and workshop hygiene, through anti-tuberculosis agitation and through the passage and enforcement of wholesome factory laws. Nevertheless it still obtains that in such an institution the sufferer gets well under the best possible conditions for his treatment; while he is not infecting his family, his fellows in the shop, and his community; his organization is relieving him of anxiety (than which what could more militate against a cure), concerning the support of his home; and when he leaves the sanatorium he returns to promulgate the ideas of hygiene and prophylaxis he has assimilated.

In Germany there are many sanatoria for consumptive workmen, generally maintained upon the plan in which by law the Government, the employer and the employee contribute in behalf of the latter. The genius of our American institutions would probably not permit the reduplication here of this system. It is nevertheless but just to state, parenthetically, that although among us the State makes no contributions, we have corporations with soul aplenty—such as have joined their employees for the general welfare of the latter. For example, the Massachusetts Iegislature has recently, upon the conjoined petition of comapny and employees, passed an old age pension bill, affecting 27,000 men working for the Boston & Maine Railroad; by its terms both parties are to contribute equally to the proposed pensions.

It is gratifying to observe, however, that in fighting tuberculosis, we have labor organizations able and ready to "go it alone." The instance here set forth has at least been antedated by the Typothetae of New York City, who maintain a sanatorium of their own in Denver, Colorado. And in Albany, New York, there is now a tuberculosis pavilion, which is decorated with the stimulating sentiment: "This is organized labor's contribution to the anti-tuberculosis propaganda; What's yours?"

Cremation.—A testator alleged to be eccentric has secured for himself the surety of this mode of disposal of his physical body by directing that unless cremated, his money should be diverted from his heirs to charity; the heirs sensibly decided they had no money to burn.

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American Practice of Surgery.—A complete system of the Science and Art of Surgery, by representative surgeons of the United States and Canada. Editors: Joseph D. Bryant, M.D., LL.D., and Albert H. Buck, M.D., of New York City. Complete in eight volumes. Profusely illustrated. Volume VI. Octavo, pp. 916. New York, William Wood & Company, 1909.

This great work rapidly approaches completion, and in doing so, the volumes become of more definite, practical interest to the clinician, because the articles deal with the more practical parts of the work.

The following subjects are treated: Prosthesis in Its Relation to Surgery of the Face, Mouth, Jaws, and Nasal and Laryngeal Cavities; Surgical Diseases and Wounds of the Nasal Cavities and Accessory Sinuses; of the Mouth, Tongue and Savilary Glands; of the Neck; of the Thyroid and Thymus; of the Thorax and Spinal Column; of the Female Breast; of the External Genitals and Vagina of the Female; of the Male Genital Organs; Chancroid; Gonorrhœal Urethritis; Surgical Diseases and Wounds of the Jaws.

The opinion has been expressed by many that this is the most complete work on surgery ever published, and a careful examination of the volume before us would certainly tend to bear out this statement.

Those of our readers who contemplate purchasing such a work should certainly examine this before deciding.

The text is profusely illustrated, clearly printed in the best type, and everything about it is first-class.

The articles, as in the previous volumes, are written by specialists in the various subjects.

Medical Jurisprudence Forensic Medicine and Toxicology.—By R. A. Witthaus. A. M., M. D. Professor of Chemistry, Medical Jurisprudence, and Toxicology in Cornell University, and Tracy C. Becker, A.B., LL.B., Counsellor at Law, Professor of Criminal Law and Medical Jurisprudence in the University of Buffalo. Second edition. Volume III. Octavo, pp. 982. New York, William Wood & Company. 1909.

This is the third and concluding volume of a great and exhaustive work, one which should be in the library of every physician and surgeon for reference.

The text is made up of articles from eminent specialists in their respective departments, and includes medico-legal relations of vision and audition, and of injuries to the eye and ear; relations of insurance; aspects of insanity in its relations to medical jurisprudence; mental unsoundness in its legal relations; care and custody of incompetent persons and their estates; medico-legal aspect of marriage and divorce; relations of X-rays and skiagraphs and examination of blood and other stains, and of the hair.

There is also a long table of cases cited in the volume which cannot fail to be of great service. The index of the three other volumes is contained in this the third one.

We cannot commend the work too highly.

A Text-Book of Physiological Chemistry for Students of Medicine.—By John H. Long, M. S., Sc. D., Professor of Chemistry in Northwestern University Medical School, Chicago. Second edition, revised, with 42 illustrations. Octavo, pp. 396. $2.50. Philadelphia: P. Blakiston's Son & Co. 1909.

This reliable work covers the ground required in the chemical course in a medical school, and in some other scientific schools. An attempt has been made not to overburden the student by going too far. The text has been kept within reasonable limits.

The book is well suited to the medical student, who is supposed to be a beginner in physiological chemistry.

The Toga Publishing Co., 45 Lafayette Street, New York City have been authorized on behalf of the Department of Education of the Sudan Government, to undertake, in future, the issue in this country, of the Reports of the Wellcome Research Laboratories at the Gordon Memorial College, Khartoum. Two volumes had previously been issued, covering the period from the foundation of these laboratories in 1903 to 1906. The Third Report, just received, completes the record up to 1908.

The Sudan Department of Education has taken this step to meet the considerable demand for these Reports which has arisen among medical men and other scientific workers interested in tropical research. Hitherto only a limited number of copies has been issued, and these reports have been sent gratuitously to Government departments, and to various medical, sanitary and other institutions interested, as well as to a few leading authorities on the subjects dealt with.

The work of these Laboratories has been so far extended that the latest Report contains some 480 pages of detailed records of many interesting experiments and researches, principally connected with tropical medicine. This volume is profusely illustrated and includes many valuable colored plates.

Simultaneously with the Third Report, and as a Supplement to it, is published a Review of the progress made in tropical medicine during recent years, compiled by Dr. Andrew Balfour, the director of the Laboratories, and Dr. R. G. Archibald.

The great cost of production of these Reports, especially in their present voluminous dimensions, necessitates making a charge for them now and henceforth. The price fixed in each case is as moderate as is consistent with the cost of publication, and any profit made will be devoted to the Sudan Department of Education to a special fund for future publications of the Laboratories.

The latest work of the Laboratories is shown in the Third Report, which includes papers showing the continuance of the work detailed in the First and Second Reports, and, in addition, introduces several new features.

There are some papers by medical officials who, though not actually members of the staff, have carried on researches in the Laboratories. The sciences of Ethnology, Ethnography and Anthropology have received considerable attention, and the papers on these subjects form a most complete addendum to the subject of tropical medicine.

There is also a chapter devoted to "Sanitary Notes"—a paper that is the result of practical experience of the problems in connection with the carrying out of a sanitary policy for a new town in the tropics.

Manual of the Diseases of the Eye for Students and General Practitioners.—By Charles H. May, M.D., Chief of Clinic and Instructor in Ophthalmology, College of Physicians and Surgeons New York, etc.

Sixth edition, revised, with 362 original illustrations, including 22 plates, with 62 colored figures. Octavo, pp. 391. $2. New York: William Wood & Company. 1909.

This little work, prepared for the student and the general practitioner, has met its intention perfectly, as shown by the demand for frequent editions.

The text has been kept to date, without increasing the bulk, a most desirable point.

There can be no question as to its reliability and its usefulness for the purpose intended.

Physcal Diagnosis.—By Richard C. Cabot, M. D., Assistant Professor of Medicine in Harvard University. Fourth edition, revised and enlarged. With five plates, and two hundred and forty figures in the text. Octavo, pp. 579. $3. New York: William Wood & Company. 1909.

This useful, practical book is based upon the author's personal knowledge, and is considered one of the most reliable and concise of any of its class. The false distinction between clinical diagnosis and laboratory diagnosis has been properly attempted.

Many changes have been made in the text, and in the illustrations to bring them to date.

The matter is confined within limited space so that the reader is not overwhelmed with its bulk.

The student and the general practitioner will find the work what they require.

Diseases of the Personality.—By Professor Th. Ribot, Paris. Translated (with homœopathic annotations), by P. W. Shedd, M.D., New York. 142 pages. Cloth, $1. Postage, 7 cents. Philadelphia: Boericke & Tafel. 1909.

The translator of this little book says the author is a psychologist and philosopher, not a physician, and that his work is illustrative of homœopathic therapeutics in the direction of a scientific basis. Our readers must judge for themselves.

The Food Tract.—Its Ailments and Disease of the Peritoneum.—By A. L. Blackwood, B. S., M. D., Professor of Clinical Medicine and Materia Medica in the Hahnemann Medical College, Chicago. 359 pages. Cloth, $1.75. Postage, 9 cents. Philadelphia: Boericke & Tafel. 1909.

This is a brief, simple, but practical little hand-book for the class for which it is intended.

Progressive Medicine—A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences.—Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia, assisted by H. R. M. Landis, M.D. Sept. 1, 1909. Six dollars per annum. Lea & Febiger, Philadelphia and New York. Volume III: Diseases of the Thorax and Its Viscera, Including the Heart, Lungs and Blood Vessels. Dermatology and Syphilis. Obstetrics. Diseases of the Nervous System.

The articles, as usual, are written by eminent authors, are of the very highest class, and worthy of careful reading.

Diagnostic Methods, Chemical, Bacteriological, and Microscopical. A Text-Book for Students and Practitioners.—By Ralph W. Webster, M.D., Ph. D., Assistant Professor of Pharmacological Therapeutics, and Instructor in Medicine at Rush Medical College, Chicago; Pathological Chemist at Cook County Hospital, Chicago. With 37 colored plates and 164 other illustrations. Octavo. pp. 641. $6.00. Philadelphia: P. Blakiston's Son & Co. 1909.

The author has brought together in this work for the use of the student and practitioner, the various methods outlined upon the clinical history of the case, and has pointed out the special interpretation of the findings in any given examination.

The purpose of the author is to help in making laboratory work go hand in hand with the more direct clinical examination of the patient—a most important object. The text is clear, concise, and practical; just what is wanted for the everyday work of the clinician. The work is highly commended.

Errata.—On page 246, August number, the work on "Rational Immunization in the Treatment of Pulmonary Tuberculosis," etc., the author's name should be E. C. Hort, instead of "Hart," as stated.

CORRESPONDENCE

THE FUTURE OF MEDICINE: DOCTORS TO BE EMPLOYED TO PREVENT, MORE THAN TO "CURE" DISEASE.

To the Editor of the MEDICAL TIMES:

With reference to the happy time to come, when all physicians will be employed, perhaps by the year, to prevent their families from becoming diseased and, therefore, from sickness (which is the "natural cure," a call-down, so to say, from disease-producing living habits), a thoughtful writer remarks, that "it is likely to be the practice of the future"; and he further says, that "the difficulties in the way are those of unreason—the abounding lack of prudence and foresight; the progress of the new system is likely to be slow simply because most people have not imagination enough to appreciate its immense advantages."

From the present writer's point of view, it is not so much a lack of imagination as of a desire on the part of people in general to learn and obey the simple laws of health and life. Indeed, they are tremendously handicapped by an excess of imagination, in that they imagine that when they fall ill they have only to call in the family doctor and get well by means of his good drugging! If by any chance they run across the expressed opinions of some of the wiser men in the profession, to the effect that the prevailing drug treatment is more akin to "kicking a man when he's down," than to giving him a genuine lift up, it goes into one ear and out of the other, as the saying goes. For example: Not so very long ago, Sir Frederick Treves, King Edward's doctor, in addressing a scientific association, said: "I look forward to the time when the people will give up the extraordinary habit of taking medicine when they are sick!" And many years ago Dr. Oliver Wendell Holmes, who for upwards of thirty years was professor of anatomy and physiology at Harvard Medical School, declared that, "if all the medicaments in the world were thrown into the sea it would be so much better for mankind and so much the worse for the fishes," and he maintained that opinion to the end of his long life, although he "came near being read out of the profession," as he once remarked, for his drastic criticism of medical practice.

Now, if all physicians were themselves really well informed, and could secure a clientele on the basis of reasonable compensation for attendance having in view the prevention of disease, sicknesses would be extremely rare, and deaths under 90 still more so. Were this knowledge and practice general throughout the country, three-fourths of our 200,000-odd doctors would be compelled to seek other business. At present, however, our young medical students are turned out of school pretty completely misinformed about the nature and uses of drugs; and, hence it is, that especially during their early years of practice they are apt to enter the sick-room only to commit a nuisance, by drugging and stuffing sick people already over self-poisoned as well as habitually over-fed. Herein we have one of the prolific causes of prolonged sicknesses and our abnormal death rate.

Let us take the case of Mr. E. H. Harriman, for example, who went to Europe a few weeks ago in search of health. He was directly given a course of forced-feeding with the view of atoning for years of "starving," as it was put, absurdly enough. At that time I wrote out my opinion as follows: "Mr. Harriman is undergoing a course of treatment that in itself would tend to make a well man sick, and that would, if long continued, make any man sick. The diet as described by cable from Vienna is about the worst ever. Meals every two to three hours, of milk, eggs, white bread and butter, roast beef, poultry, etc., which the eminent Dr. Streumpel calls 'a systematic fattening cure.' To this was added a couple of bottles of beer during the day. Very likely, I said, this regimen may for a brief time produce an accumulation of *suet,* and possibly stimulate him in a way to make him feel better for the time being; but I predict that, if he holds to it for any considerable length of time, his stomach will finally revolt at the whole miserable business, and he will either decline and die, or he will refuse to continue the regimen."

I have had consultants who, on coming to me, have told me of an experience with the "fattening cure," in which under the stuffing diet they gained some fifteen to twenty pounds, only to have an attack of diarrhea that will run off all the fictitious gain and several pounds more; but it seems that poor Harriman made no gain at all, coming home, now, for what is termed "the after-cure"! He said to the reporters, "I left ten pounds over there, which is a good deal for a little fellow like me." And the baths so weakened him that he is now hoping that he may regain strength by resting! Strangely enough, most physicians seem to imagine that building up a patient is a question of running down excessive amounts of food, as though mere swallowing, and not digesting and assimilating, was the thing!

At this time I have a patient, a lady, who had had a diet very similar to that of Harriman as described above, some sort of meal every two hours during the day, even encroaching upon the night, and had wasted to a skeleton, with scarcely strength to move a hand, and given over absolutely as doomed to die. Never a movement of the bowels except from physic, every dose of which exhausted her to fainting. Now, during the past three months she has not had a dose of physic or any laxative medicine, and her bowels are regular and normal. Instead of the over-frequent meals, taken with disgust, she is eating two or three times a day with pleasure and satisfaction, and it begins to look very much as though she might get up and about again. At any rate, it is certain that her life has been prolonged and her comfort promoted by the radical change in treatment.

CHARLES E. PAGE, M. D.

Boston, August 25, 1909.

NOTES OF TRAVEL IN EUROPE.—FRESH AIR, SANITATION, DIET, TUBERCULOSIS.

To the Editor of the MEDICAL TIMES:

The French are lovers of fresh air, at proper places, the parks, for instance, and at the proper time, during the day in summer. But when they are indoors, they do not want to be outdoors at the same time. To undress with one's window open and the curtains up is against the ordinance; to sleep with the window open is reprehensible though not punishable. In summer, unless the day is unusually warm, the windows of the public buildings and of most of the hospital wards, are shut.

I shall not forget a tedious night-ride from Dijon to Switzerland. What I expected was to find a compartment with ten places, as comfortable as a stateroom on a Pullman car though without bedding, to turn out the electric light or pull the shade over the gas light, stretch out on one of the long soft sofas and go to sleep, possibly to have an entire compartment to myself. That would be the ordinary experience but, for a wonder, the train was so crowded that I let it pass and waited for the next, which was also crowded. As I went in, I opened the window in the corridor to thin the air a little and left the door open into the compartment, in which there were already five persons. After a few minutes, some one shut the door, the window being already closed. It was a rather warm, damp night and while the passengers were reasonably clean—bath tubs are still somewhat of a luxury in Europe—they were not so ridiculously lacking in normal odor as are our people of the better class, and in the course of a few minutes, I was smoked out. In the corridor was a little folding seat, about as comfortable as a seat in a street car and wide enough for a boy of twelve. It grew chilly and the window let in enough rain to soak one side of my clothes, but I could at least breathe. Besides, the passengers were in the right, for, in case of dispute, the printed rules expressly give the preference to the closure of a compartment. To have attempted to change the life-long habit of so large a majority, by a hygienic argument delivered in bad French after midnight, would have been futile.

In the omnibuses in Paris one pays six cents for an inside seat, three cents for a seat on top in the open air. There are no strap hangers; they have to wait for the next omnibus. I indulged in the luxury of a first-class seat only two or three times. The windows are loose enough to rattle, but not loose enough to admit air, and the general effect is that of taking a Turkish bath in a boiler factory.

The theatres are usually also shut up tight during the acts, and, though as well ventilated as our own—which is not saying much—they are uncomfortably hot in summer.

Paris—and, indeed, every European city that I have seen—is kept clean and the sanitary provisions, as to water supply and sewerage, are excellent. The Seine water is green at the upper, eastern end of Paris and is reasonably clear even after passing through the city. It

is used for commercial purposes, street sprinkling, for the fire department, etc., and there are numerous street faucets where any one may draw water, but all are labeled non-potable. Drinking water is supplied in smaller mains from a carefully guarded group of springs, and in some parts of the city this water is cold enough even to suit an American in summer. However, the Seine water is kept almost entirely free from sewage above the city and there would be little actual danger from drinking it. Typhoid is almost an extinct disease, by no means so frequent as ecchinococcus cyst or diabetes. The interior plumbing is hygienic so far as actual transmission of disease is concerned, but, as stated, bath tubs are not in common use, the closets are often dark and poorly ventilated, and there is often no seat at all but merely a foot rest, which may or may not operate a flushing device, over a hole leading to a pipe.

Paris has innumerable broad streets, squares, small parks and grounds about public buildings and the river with its quais takes up a wide strip in the very middle zone, so that there is an unusual degree of encroachment on the space for residences. Yet nearly three million pople are contained in a total area of about thirty square miles, which, with us, would just about accommodate an average community of two hundred thousand. There is also a considerable floating population. In other words, Paris presents the paradox of excellent sanitary and poor hygienic conditions, using the two words in their limited sense. The average house is five stories high and is occupied by many families or persons living singly. There are practically no lawns or yards, no wooden buildings and only a few of brick. Many of the stone houses are quite old, damp, dark and overcrowded—though it is a disappointment to the visitor to find very few ancient buildings of any kind and only a few streets of private houses of any degree of antiquity.

As to food, the American visitor is perhaps liable to get an unduly favorable idea. Certainly there is no city in the United States where one can find so easily a restaurant serving delicious meals at a low price. The traveler who merely follows the crowd will get just about the same food and will pay the same price as in an American city, but if he cuts loose from the tourists and lives as nearly as possible with the natives he will find many delightful gastronomic novelties and will pay about half of customary American rates for the same quality of meals. Then, too, there is no American city in which fruit and vegetables are so clean, fresh, perfect and cheap as in Paris, allowing, of course, for a few local differences in demand and supply and for differences in season.

The prevalent notion that Paris restaurants serve remnants from those of higher and higher class, is all nonsense. There are a few places which make a business of serving such dainties to those who are not troubled with aesthetic scruples and who can not afford to buy them first hand. Poor invalids sometimes avail themselves of this opportunity. Doubtless, too, soups and various fancy dishes are made out of scraps, as they are in many places in America. The average Frenchman, in moderate circumstances, pays about 25 to 35 cents for a meal that the average American would pay double for. Restaurants of this grade cater to the majority of the persons who eat at public places—and, on account of their relative cheapness and their availability in all parts of the city, the average French family uses restaurants much more than the American family of the same means can afford to do. A little reflection will convince the most timorous that there cannot possibly be crumbs enough from the table of Dives to supply these numerous Lazari. Besides, one can see that the bread is fresh and placed on the table in whole loaves, a meter long, or in clean cut pieces of 20 centimeters. It is as free as water and usually freer than ice water though the American can almost always get water that is sufficiently cold, and at most has to pay two cents for a dish of cracked ice. The fish course is usually generous, as well as very good, and if one has ten little fish on a metal skewer or two whole mackerel as big as a fair-sized perch or half a sole, he need not fear that he is eating some one else's leavings. Many of the other viands quite as distinctly guarantee their freshness. Potatoes are dug when about the size of a man's thumb; they are quite yellow but extremely good and the fruit combines the size of cultivation with the flavor of small, wild fruit and is fresh. Some of the viands, such as soup, vol-au-vent (a large light pastry filled with mushrooms, sweet breads or chopped meat), bouillebaisse (a sort of chowder with fish, vegetables, mussels in the shell or lobster, etc), and others, might require a written guaranty as to their first-hand condition. But, at any rate, they are sterilized by heat and so much more delicious than all but a few of our American delicacies, that one is glad of the chance to eat them without asking questions.

On the other hand, it must be admitted that many of the inhabitants of Paris have an income far less in money value than our own working class so that the food stuffs that seem so cheap and good as we price them in the markets or in the venders' carts, are still relatively dear. Meats are about as expensive as with us, although we get the impression that they are cheap because the restaurant keeper does not realize that he ought to make three or four hundred per cent. profit, when he sells them cooked and on a plate. Thus, a large part of the poor man's food consists of bread, without butter, the coarse innutritious vegetables and wine. He rarely gets drunk, he does not surcharge his system with exogenic purins from tea and coffee, he certainly does not overtax his emuntories with an excess of proteid. He uses little sugar, either directly or in candy, which is dear. On the contrary, he is consuming a relative excess of starches and cellulose and is using dilute alcohol steadily.

Now if we collect the items of crowding, dislike for fresh air except for recreation in the summer by daytime, general distaste for strenuous sports of all kinds, low proteid and perhaps inadequate total diet, continuous use of alcohol from early childhood, even with good water supply and sanitary conditions, we see that we have just the conditions which favor tuberculosis.

As a matter of fact tuberculosis is extremely frequent, not only as consumption but in the serous surface inflamations, miliary and glandular types and even in forms that with us are exceedingly rare. And, once contracted, it is very difficult to find the necessary general ruggedness of constitution or to make the patient carry out the proper regimen for its cure.

A. L. Benedict, A.M., M.D.

Buffalo, N. Y.

RETROSPECTIVE

The Ochsner Treatment of Appendicitis.—Dr. Jas. M. Barnhill (Amer. Journal of Surgery, July, 1909) says that there is a great deal of misconception with regard to this method of treatment. Most practitioners regard it as the medical treatment of appendicitis, whereas it is distinctly surgical. He describes the treatment by giving Ochsner's conclusions, which are as follows:

1. Patients suffering from chronic recurrent appendicitis should be operated upon during the interval.

2. Patients suffering from acute appendicitis should be operated upon as soon as the diagnosis is made, provided they come under treatment while the infectious material is still confined to the appendix, if a competent surgeon is available.

3. Aside from insuring a low mortality this will prevent all serious complications.

4. In all cases of acute appendicitis, without regard to the treatment contemplated, the administration of food and cathartics by mouth should be absolutely prohibited, and large enemata should never be given.

5. In cases of nausea or vomiting, or gaseous distention of the abdomen, gastric lavage should be employed.

6. In cases coming under treatment after the infection has extended beyond the tissues of the appendix, especially in the presence of beginning diffuse peritonitis, fasting and gastric lavage should always be employed until the patient's condition makes operative intervention safe.

7. In case no operation is performed, neither nourishment nor cathartics should be given by mouth until the patient has been free from pain and otherwise normal for at least four days. The same practice should be followed after operation.

8. During the beginning of this treatment not even water should be given by mouth, the thirst being quenched by rinsing the mouth with cold water and by the use of small enemata. Later small sips of very hot water, frequently repeated, may be given, and still later small sips of cold water. There is danger in giving water too freely, and there is great danger in the use of large enemata.

9. All practitioners of medicine and surgery, as well as the general public, should be impressed with the importance of prohibiting the use of cathartics and food by mouth, as well as the use of large enemata, in cases of patients suffering from acute appendicitis.

10. It should be constantly borne in mind that even the slightest amount of liquid food of any kind given by mouth may give rise to dangerous peristalsis.

11. The most convenient form of rectal feeding consists in the use of one ounce of one of the various concentrated liquid predigested foods in the market, dissolved in three ounces of warm normal salt solution, introduced slowly through a soft catheter inserted into the rectum a distance of two or three inches.

12. This form of treatment can not supplant the operative treatment of acute appendicitis, but it can and should be used to reduce the mortality by changing the class of cases in which the mortality is greatest into another class in which the mortality is very small after operation.

The Ipecac Treatment of Amoebic Dysentery.—Dr. George Dock (N. Y. Med. Jour., July 10, '09) calls attention to this most useful drug in this disease. The drug appears to have a direct destructive action on the amoebae. There is also a cholagogue action and sometimes a purgative one. Observations made show that patients treated with ipecac remain free from symptoms after a cure has once been established.

The treatment consists in keeping the patient in bed. There should be a preliminary dose of Epsom or Glauber salts, and all food should be stopped while ipecac is being taken, and only liquids used after it. The dose of ipecac may be varied to suit the severity of the case, from thirty to sixty grains being given at first, and then twenty to forty grains twice a day, for three days. The ipecac is given in pills covered with salve or keratin to prevent an emetic action, salve or keratin being undissolved in the stomach, this makes unnecessary the use of opium preparations, formerly thought to be essential in the ipecac treatment. Nausea and vomiting rarely occurs and these may be avoided by regulating the medicine with regard to the mealtime. Hot normal saline flushes of the colon, or ice water, are valuable in the after treatment. Local treatment of ulcers of the rectum should be instituted if necessary.

Epilepsy.—Dr. W. H. Kidder (N. Y. State Journal of Medicine, July, 1909) reviews this subject and thinks that while recent observers may be inclined to describe its various manifestations as a symptom complex, that there is too much definiteness about its symptoms to be regarded as such, and therefore there is some justification for assuming that epilepsy is a distinct disease. Our knowledge of the cause and pathology is still vague, but from studies made we may arrive at the hypothesis that epilepsy is a disease due to some definite defect in the biochemic processes of the body. Gross causes are so varied that they should rather be looked upon as contributory. The most likely cause rests in some defect in the ultimate processs of nutrition, either of a katabolic or anabolic nature. The specific defect may be present in the body and only make its appearance as a result of some peripheral irritation. Disorders arising from the digestive tract are especially prominent, and should receive careful consideration. The influence of alcohol is widely recognized. The physical hygiene of the patient should be that of a normal individual, and especial importance should be paid to the mental hygiene of these patients. There is need of teaching epileptics the art of self-control, and of inducing in them that state of mind which tends to keep people on "the sunny side of the street."

Percussion of the Lungs.—Dr. Hughes Dayton (Med. Record, July 24, '09) after reviewing the methods of percussion of the lungs draws the following conclusions:

1. There is no fixed note corresponding with the term pulmonary resonance; but each individual chest has its own standard tone which should be determined before drawing conclusions as to the existence of pathological conditions.

2. In comparing two tones, the ear more readily recognizes a change from normal pulmonary to impaired resonance than a corresponding increase of resonance from impaired to pulmonary.

3. In simply comparing the notes over symmetrical points on the two sides of the chest, an observer may easily overlook symmetrical impairment of resonance as slight impairment on one side as contrasted with more marked dullness on the other.

4. It is, therefore, important also to percuss each lung independently, especially in cases in which one lung is obviously abnormal.

5. It is of particular value, in order to determine the limits of a pulmonary lesion, to find some portion of the lung over which the tone may be considered the standard pulmonary resonance, for the individual chest, and then to percuss the chest both upward and downward from the site of such a normal resonance, so as to approach the dull areas from the normal, whether the former are at the apices or at the base.

High Frequency Currents and their Medical Application.—C. F. Bailey (The Lancet, July 3, 1909) concludes that experiments and observations made show that there are four marked effects of electric energy produced, uncomplicated by chemical effects, by high frequency currents: (1) Increased cell activity, increased metabolism; (2) return of a locally inflammed tissue to its normal; (3) either general vascular dilatation or contraction, according to the particular method used, and (4) "inhibition," diminished sensory or motor excitability. So that where one or more of these effects is or are desired and where the remaining effects are not prejudicial, or can be very much diminished or abolished, there high frequency treatment may be of real value, and for these reasons has a prospect of considerable therapeutic use in the future.

Laryngitis Due to Blastomycetes.—Sore throat is one of our common afflictions. Rheumatic angina has received attention. Syphilitic sore throat is frequently encountered. Bellei and Collina (Il Policlinico, no. xiii, fasc 5) describe their study of laryngitis due to blastomycetes, which in 1902 with Gherardini they reported first.

This paper notes another case in which likewise tuberculous infection was thought probable, until by repeated examinations the true diagnosis became clear. The practitioner may not find such cases occur with frequency. But in fact one can never be sure of the unexpected, and the account in these instances of vain search for carcinomatous debris in the sputum, or the bacillus of Koch, may be helpful in putting us on guard.

Several references are given and include the paper of Eisendrath and Ormsby (Jour. Am. Med. Ass., Vol. XLV, p. 104).

Diagnosis of Pneumonia in Babies.—Children of three or four years when taken suddenly ill, showing fever, should always have their lungs examined, says Variot (Journal des Praticiens, February 20, 1909). There may be a few sub-crepitant rales at the base of the lung. No physical signs may be found; the fever falls by crisis, after five days. Then we know it has been a pneumococcic infection. Under the age of two years this is severe and much to be feared; between two years and six the danger is slight (mortality about 5 per cent.). Two children developed pneumonia; their home was visited by the grandfather who contracted the same disease. He died, and the children recovered.

Attractive Living Rooms.—Of course, any noises, odors, or disagreeable sensations may become set in the background of our feelings when they are matters of ordinary and incessant occurrence. Ugly wallpaper may be an actual incitement to murder. This, unfortunately, cannot be adduced in the proof of cause of a brainstorm. Nevertheless it is a heedless physician who disregards the surroundings of his patient. Robert Morris tried to show us the value of harmonious articles about us.

Patients often speak of the sensation of restfulness in a hospital. This may be explained by the order and simplicity of the appointments. Few people fail to respond to such surroundings. It would be a God-send if in our crowded manner of living something of hospital order and appointments could be imitated. The blank whiteness of a surgical ward is not necessarily to be imitated. The choice of agreeable colors and some taste in ornament is so much a matter of temperament that teaching is less called for; nevertheless in our schools some appreciation of the principles of Grecian life, Japanese culture, Chinese civilization and Roman architecture would help us to form a basis of modern reformation.

If we have gained comfort, in our little complexities, at least let us try to regain the dignity, the proportion, the elegance, and the grandeur of former times. There is something in a view of a great sea, or a towering mountain, which calms and steadies the mind. But our little rabbit warrens, our little cave-dwellings, do not stimulate. And the hideous patches of wallpaper, carpet, filthy mattings, disgusting ash heaps, and general squalor seen partly in the railroad approaches to any town, indicate states of mind.

Bronchiectasis.—G. Hoppe - Seyler (Deut. Mediz. Wochenschr., July 15, 1909) emphasizes the prophylaxis, especially in the aged and in cases of bronchitis. The secretions from the air-passages should be thoroughly evacuated. In the elderly this is made difficult by the reduced sensitiveness of the bronchi, the less elastic thorax and lungs and the weakness of the chest muscles. Such patients should use stimulant expectorants; should change their positions often, reclining at times horizontally or with the pelvis raised to promote expulsion of the sputum. Delaying resolution in pneumonia requires that patients should use breathing exercises and lie on the sound side to prevent consolidation and stiffening of the lung tissue which hampers evacuation of the bronchial secretions. Early evacuations of pleural effusions will aid in preventing development of adhesions. Chronic bronchitis should be cured or at least kept under control with turpentine and creosote derivatives. Treatment of the cylindrical form of bronchiectosis is the same as of chronic bronchitis; breathing exercises supplemented by compression of the lower part of the chest will benefit, the patient putting his hands on the sides of his chest and bending far over, as if bowing low, the resulting upforcing of the diaphragm thus exercising the lower part of the lung. In sacculated bronchiectosis of the lower lobe it is difficult to evacuate the secretion; this can be promoted by reclining in a slanting position, the shoulders low, or even the true Trendelenberg position; the patients should train themselves to recline thus an hour or so morning and night, or even longer, changing from side to side until the position is found in which most copious evacuation occurs. It can be promoted by compression of the region involved. If the patients are not too weak, out-of-door exercise and climbing will benefit by the greater expiratory demands. The secretions may be softened and made easy to expel by the inhalation of fumes from turpentine poured on boiling water. Mobilization of the chest wall by extensive resection of ribs are advised if operation becomes necessary; thus may the chest wall

sink in and compress the lung, closing up the formerly gaping cavities. Such an operation should be followed by inhalations and breathing exercises, opening into and draining the cavities as a last recourse.

The Role of Salt in the Production of Twins.—Under this heading the editor of the Journal des Praticiens discusses, with some humor, the studies of Loeb (Archiv. für Entwicklungs—mekanik, Bd. XXVII, fasc. 1, 1909) and the work of Stockaro (Journal of Experimental Zoology, fasc. 2, 1909), as well as of Canna (Drzewcoca Revue des Idèes, May 15, 1909).

In spite of the vagaries of Fundulus Heteroclitus, it does not seem probable that we may reach conclusions as to the effects of salts of magnesium, calcium and potassium in their influence upon the geminal products of humankind.

Secondary Carcinoma of the Lung.—L. M. Warfield (Med. Rec., July 24, '09) describes a case following removal of a mammary cancer. There was no recurrence in the scar or in the breast integumen; there were widespread nodular metastases in both lungs and the liver, but there was no enlargement of the superficial or mediastinal glands. Dyspnoea was characteristic, the paroxysms being out of proportion to the physical signs. The sputum was scanty; there was little anasarca; the pulmonary signs pointed to emphysema and chronic bronchitis.

Laryngeal Tuberculosis.—W. E. Casselberry (J. A. M. A., August 7, 1909) finds that tuberculous hyperplasia in the larynx has not infrequently undergone resolution, in whole or in part; unmistakable tuberculous ulcers have occasionally healed and remained healed. Favorable negative qualities have commonly characterized the cases which have proven capable of arrest or recovery: for example, the laryngeal hyperplasia has been less progressive, less diffused and less prone to ulceration; the underlying pulmonary infection has been less extended; there were fewer tubercle bacilli, a lower pulse rate and less emaciation. These qualities persisting, the cases which are capable at least of a hopeful resistance can be differentiated, thus justifying every effort, at any sacrifice to invoke the methods likely to arrest the disease and lead to recovery, including intralaryngeal surgery when the lesions in degree and kind are suitable for it. In like manner the nonresistant type should be recognized and these patients guarded from the privation and distress which surely follow in the wake of an indiscriminate exposure to the elements and to the hardships of travel in distant climes. In them surgery is contraindicated, excepting to prevent air hunger and suffocation, or to prevent starvation by the removal of some particularly painful impediment in swallowing.

Pellagra.—The recent reports from our Southern States justifies some remarks on this hitherto scarcely known disease in our country. Reports of the appearance of this disease have come from Maryland, Georgia, Alabama, Texas and South Carolina. It has been known for centuries in certain portions of southern Europe, especially Italy and Roumania. It is characterized by certain cutaneous manifestations with disturbances of the cerebro-spinal and digestive systems. The disease usually makes its appearance in the spring and is ushered in by symptoms of disturbed digestion, such as lassitude, headache, pain in epigastrium and diarrhoea. A severe form of stomatitis develops, sometimes causing aphthous ulcers to appear over large areas.

The cutaneous manifestations are of an erythematosquamous and pigmentary character, occuring on those parts exposed to the rays of the sun, as on the back of the hand, lower part of forearm, face and in those who walk barefoot the dorsal surface of the foot. They can be divided into three stages—first, a congested condition of the parts causing the erythema to appear; second, the affected surfaces become dry, scaly thickened and pigmented; and the third, there is a tendency to atrophic thinning. Vesicles, bullae and petechiae are sometimes noted. As winter approaches the disease tends to improvement, but with the return of spring there is a recurrence of the symptoms. The nervous manifestations include vertigo, and in the severe forms disturbances of sensation, well marked spastic symptoms and sphincter paralyses are noted. The disease lasts about five years when a fatal termination usually ensues as a result of the debilitated condition of the patient from digestive weakness and involvment of the cerebro spinal system.

It has been attributed to the consumption of damaged maize, but cases have been reported in those who have never used this food. Poverty, alcoholic excess, poor hygienic surroundings and exposure to the sun are predisposing factors. Some authors consider the last to be the most essential, but this view is not generally accepted. The postmortem findings are usually a sclerotic condition of the brain and cord, inflammation of the membranes, atrophy and anemia of the internal organs, together with a congested condition of the skin.

The treatment should be on a rational basis, first clearing the bowels and following with intestinal antiseptics. Arsenic has a favorable influence on the disease. The vital force should be kept up by stimulants and symptoms treated as they arise. Thayer has reported a case treated with thyroid extract. The symptoms improved immediately on administration of the drug, and the patient remains well as long as she takes it.

Karell Cure in Treatment of Failing Cardiac Compensation.—Galli (Policlinico, Rome, and J. A. M. A. July 17, 1909) has had very favorable experiences with this strict milk diet. It does no good to attempt it unless the physician is able to maintain it strictly according to rule, not allowing more than the 800 gm. (27 ounces) of milk during the day, taken in four portions.

The temperature of the milk is immaterial, as also whether it is boiled or not. This diet must be kept up three to seven days, and it is remarkable, he says, to note the increased diuresis and the disappearance of edema. By the fourth day the diuresis may be six or seven times the amount of milk ingested, while the heart action is improved to correspond. Not only the edema disappears, but the waste products are eliminated to a remarkable extent. In one of his cases with complicating asthma, it banished entirely after the third day of the Karell cure. The heart is relieved of part of its load by the elimination of such large amounts of fluids, if the heart and kidneys are still capable of functioning. Parenchymatous nephritis offers little chance for success with it; interstitial nephritis is its most grateful field. No drugs are needed except possibly with much cyanosis and dyspnea when heart tonic may prove useful. The Karell cure is almost ideal, he adds, in obesity with failing compensation. The load of fat imposes

extra work on the heart, which resumes normal functioning after the weight has been reduced. From 10 to 40 pounds may be lost in a few days under this Karell diet. The patient must remain in bed during the courses. In chlorosis, with doughy tissues and flabby heart, this treatment may also give benefit.

Removal of Superfluous Hairs.—Pirie (Lancet, June 19) states that the three essentials in obtaining good results with the operation are: (1) Connect the needle to the negative pole; (2) use a fine stiff wire as a needle (the wire supplied with the finest hypodermic needle is a suitable one); (3) insulate the wire so that only the last one-sixteenth of an inch supplies the current. The advantages of this method are two—(1) no scarring after the operation; and (2) a lower percentage of regrowth of hairs.

Solid Carbon Dioxide in Lupus Erythematosus.—Gottheil (N. Y. Med. Journal, July 3, 1909) has employed this method of treatment during the last two years, and has found it very effective. Being a solid body it can be whittled into any desired shape. The strength and the amount of the application can be gauged with the utmost nicety by varying the time employed and the pressure used. Light pressure, for, say twenty seconds, will give a moderate reaction without the ultimate formation of scar tissue, or with an amount of it so superficial as to be practically negligible. Harder pressure for sixty seconds or so will occasion marked reaction and destruction of the skin. And between these two extremes any desired amount of tissue destruction and scar formation can be gotten. Solid carbon dioxide has the further advantage of being a cold cautery, and therefore an anaesthetic cautery. It can therefore be used without a local anaesthetic, the intense cold serving the same purpose. The pain at the time of application is trivial; a few minutes later there is a moderate amount of burning similar to that after a frost bite. This wears off entirely in an hour or two.

Ivy Poisoning.—Dr. Addison W. Baird (Med. Record, Aug. 7, 1909) has formulated the following treatment: (1) No scratching; (2) no ointments in the acute stage; (3) no bandages, for these tend to spread the poison to the adjacent surface. If any protection is necessary, let it be a loosely applied dressing of absorbent cotton, kept moist at all times and changed at short intervals. (4) Frequent and copious washings with lukewarm water and an unirritating soap. This dissolves and removes the poisonous serum which is exuded from the vesicles, and prevents its spread to the surrounding skin. Alcohol is a solvent of the poisonous principle, but the use of it tends to spread the trouble. In handling the inflamed surface it is best to wear rubber gloves; (5) after the parts are washed, apply warm solution of 2 to 4 per cent. of permanganate of potassium. This completely neutralizes any poison with which it comes in contact. The strength of the solution and how often it is applied is a matter of judgment with the physician; (6) after the acute stage is past, when the disorder is considerably abated and a condition of eczema exists, the use of water may be objectionable and soothing ointments are permissible.

Formaldehyde for Flies.—The Lancet observes that it is not always possible to trace the origin of illness; but it is easy enough to give valid reasons why the fly can be the introductory agent. The fly is not scrupulous as to its environment—it alights at one time on most offensive material and at another on the food in the kitchen and on the table. The experiment is noted of a common blue-bottle which was allowed to walk across a piece of freshly sliced potato; the potato subsequently developed colonies of bacteria all along the fly-track, whereas elsewhere no development took place. How are we to get rid of the fly? Fly papers and sticky strings are unsightly and the struggle of a fly to release itself from a sticky substance is not an agreeable spectacle. The best exterminating agent is a weak solution of formaldehyde in water (5ii-Oj). The flies are attracted to the formaldehyde which they drink. Some die in the water; some get as far only as the immediate vicinity of the plate of water; but all ultimately succumb; hundreds may be swept up from the floor. And the flies have thus died under a dose of a fluid which is fatal to germs, a fluid which is also inoffensive and for practical purposes non-poisonous. We by this means diminish the scourge and disinfect the slain.

The Diagnosis of Pancreatic Disease, as of all other obscure affections, is possible only by utilizing all the means at our command. Close clinical observation, declares A. E. Taussig (Internat. Med. Jour., Sept., 1908), is indispensable; but the laboratory must also be utilized. Blood examinations are of doubtful value; the analysis of fatty stools and the "nucleus test" are useful but not always free of error. The demonstration of trypsin in stomach contents and stools have a negative value in that they prove the pancreas functionating and the pancreatic and common bile-ducts patent. Diabetes mellitus or alimentary glycosuria, when present, may serve to establish the diagnosis. The Cammidge tests are still on trial; but while the H. & B. modifications seem open to valid objections the improved C reaction seems indispensable for the diagnosis of obscure pancreatic affections. The Cammidge test is based on the theory that the urine in pancreatic disease contains a substance which, when boiled with hydrochloric acid, splits off a carbohydrate, possibly a pentose, that produces a typical crystalline osazone when treated with phenylhydrazin. There are two modifications of the test, one of which (it is claimed) denotes pancreatic cancer, the other pancreatitis. Cammidge himself admits these tests to be difficult and somewhat uncertain; wherefore he has recetly brought forward a third modification, the "C-reaction." In this the modification is slightly more complicated; but the result is an absolute one, and is therefore independent of the investigator's personal bias. A specimen of the 24 hours' urine or of the mixed morning and evening secretions is filtered several times through the same filter paper. If acid and free of sugar and albumin, 2 c.c. of strong hydrochloric acid (sp. gr. 1.16) are mixed with 40 c.c. of the clear filtrate and the mixture gently boiled on a sand bath in a small flask with a funnel condenser. After ten minutes boiling the flask is well cooled in a stream of water and the contents made up to 40 c.c. with cold distilled water. The excess of acid is then neutralized by slowly adding 8 gms. of lead carbonate. After standing for a few minutes to allow of the completion of the reaction, the flask is again cooled in running water, and the contents filtered through a well-moistened, close-

grained filter paper until a perfectly clear filtrate is obtained. The acid filtrate is then well shaken with 8 gm. powdered tribasic lead acetate, and the resulting precipitate removed by filtration, as clear as possible a filtrate being secured by repeating the filtration, if necessary, several times. Since the large amount of lead now in solution would interfere with the subsequent steps of the experiment it is removed, either by a stream of sulphuretted hydrogen or by precipitating the lead as a sulphate. To this end the filtrate is well shaken with 4 gm. of powdered sodium sulphate, the mixture heated to a boiling point, then cooled in a stream of cold water to as low a temperature as possible, and the white precipitate removed by careful filtration. Ten c.c. of the perfectly clear, transparent filtrate are taken and made up to 17 c.c. with distilled water; it is then added to 0.8 gm. of phenylhydrazin hydrochlorate, 2 gm. of sodium acetate and 1 c.c. of 50 per cent. acetic acid, contained in a small flask fitted with a funnel condenser. The mixture is boiled on a sand bath for 10 minutes and filtered hot through a small filter paper, moistened with hot water, into a test tube provided with a 15 c.c. mask. Should the filtrate fall short of 15 c.c., it is made up to that amount with hot distilled water, the added water being well mixed with the fluid. In well marked pancreatic inflammation a light yellow flocculent precipitate should appear in a few hours; but in less characteristic cases the preparation may have to be left overnight before a deposit occurs. Microscopically the precipitate consists of long, light-yellow, flexible, hair-like crystals arranged in delicate sheaves, which when irrigated with 33 per cent. sulphuric acid melt away and disappear some fifteen seconds after the acid touches them. Cammidge has found this test very reliable—almost pathognomonic. In 67 cases of pancreatitis the reaction was always positive; in 16 cases of pancreatic cancer it was negative 4 times. In 117 cases of other diseases it was negative 113 times, whilst in the urine of 50 healthy individuals it was always negative.

The Chemistry of Anaphylaxis.—H. G. Wells (Jour. Infect. Dis., Oct., 1908), finds that egg albumen, freed from all other proteins of egg-white by repeated crystallization, produces typically the anaphylaxis reaction; it sensitizes in doses as small as 1-20,000,000th of a gram, fatally in doses of one-millionth of a gram. The minimum lithal dose for sensitized pigs is about one-half a miligram by intraperitoneal injection, and about one-tenth to one-twentieth a milligram when injected into the circulation. The unpurified mixed proteins of egg-white are much less active, suggesting an inhibitory substance in the crude egg-white. Wells finds the quantity of egg-white fatal to sensitized pigs to be so small that it seems improbable the injected protein can cause death by splitting up and liberating poisonous substances in the space of time in which the reaction occurs. More probably if poisonous substances are produced it must be by the cells of the intoxicated animal, from some of the substances in its own body, or the whole reaction may be essentially different from the ordinary intoxication. The minuteness of the minimum sensitizing and intoxicating doses of pure egg albumen seems to indicate conclusively that, at least in the case of this particular protein, both the sensitizing and intoxicating agents are one and the same kind of protein molecule, or else two different portions of the same molecule. Gelatin seems to be without the power of participating in the anaphylactic reaction; this may be due to the paucity of this substance in aromatic radicals. The destruction or reduction of toxicity of proteins by heat is due to the change of solubility of the proteins; experimenting with the vegetable proteins Wells finds that those which are poor in aromatic radicals give very weak reactions. He saturated the proteins with iodine but found no modification of specificity as has been found in the precipitin reaction. Trypsin digestion of serum furnished further evidence of the protein nature of the substances concerned in the anaphylactic reaction, for both sensitizing and intoxicating principles are attacked and slowly decrease in strength as the coagulable protein disappears.

Tuberculosis Among Live Stock is steadily increasing, as shown by the number of animals found affected at the various slaughtering centers; so reports the Bureau of Animal Industry of the United States Department of Agriculture. This increase is due in part, but only in part, to the increased efficiency of the method of inspection. Nearly one per cent. of cattle and over two per cent. of hogs slaughtered are tuberculous. Feeding experiments have proved conclusively that hogs are readily infected through the injestion of feces and milk from tuberculous cows; no doubt, therefore, the prevalence of the disease in hogs can be greatly reduced simply by eradicating it from cattle. Much testing of cattle has been done in and about Washington, D. C., for the purpose of obtaining a pure milk supply and to get information regarding the extent of tuberculosis in that region. About seventeen per cent. of the dairy cattle have reacted to these tests. The percentage of tuberculosis in various States, as shown by tuberculin tests conducted by State officials, indicates that from 2.79 to 19.69 per cent. of the cows react; and it is estimated that in the country at large at least one-tenth of the cows in dairy herds are tuberculous. The agitation against the milk of tuberculous cows as human food has had the effect of causing many herds to be examined, with results astonishing to owners and officials alike; the Kansas City Medical Index-Lancet well observes that it cannot be wondered at how many infants and children die of intestinal tuberculosis when so many of the cows from which milk is obtained are tuberculous. From an economic and business standpoint alone live-stock raisers cannot afford to have tuberculosis in their herds. Argentina, for example, requires that all cattle imported into that country shall have the tuberculin test upon arrival; consequently United States exporters have had their cattle tested before shipment; the result of these tests have shown in some of the pure bred herds nearly fifty per cent. of the animals to be diseased, in consequence of which sales were lost. When the practice becomes general for all buyers of breeding cattle to have animals tested before placing them in their herds the breeder of strictly healthy cattle will be much sought after; some breeders of pure-bred cattle have established or are arranging to establish such

herds. When breeders comprehend that it is unprofitable to go on breeding cattle while tuberculosis exists in their herds much of the objection to the sale of live stock subject to inspection will disappear; it would be worth the price of several condemned animals for the owner of a valuable herd to know as early as possible if the disease exists in his herd, for the longer he delays in preventing its spread the greater will eventually be his loss. Over ten billion pounds of meat was inspected by the Federal authorities last year; of these forty-six million pounds were condemned, nearly three-fourths being for tuberculosis. The recent effort of the large packing interests to buy all dairy cows subject to post-mortem inspection shows how serious the plague is becoming; sooner or later the man raising tuberculous cattle must suffer the loss unless this is paid for out of the public funds; and when the loss is placed upon the producer the end of the tuberculous cattle evil is not far. It may become necessary for the Federal Government to quarantine against interstate shipments of cows from certain States where the disease prevails to a considerable extent; to require a strict supervision over all animals removed from such States for interstate shipment; the quarantine to be removed from sections of the State only when it has been demonstrated that the disease has either been eradicated or is under strict local quarantine.

Sclerosis of Abdominal Vessels.—Rossbach (Munich Mediz. Woch., May 11, 1909) details a case in which abdominal pain extending through years sometimes increased to actual crisis; however, though the left ventricle was much hypertrophied and the blood pressure high, the kidneys were intact and the capillaries free from sclerosis. But the abdominal aorta was in such advanced sclerosis that it was merely a rigid tube. Cardiac hypertrophy was inevitable, by reason that so much extra work was required to propel blood through this artery. The abdominal pain corresponded to the clinical picture of intermittent intestinal angiosclerotic dyspragia." "intermittent anemic dysperistalsis," "arteriosclerotic colic" and "abdominal angina."

Heart Disease.—J. Barr discusses the treatment (Brit. Med. Jour., Apl. 24, 1909). Drugs should only be used when necessary and always under strict medical supervision. People, unfortunately for themselves, have taken drugs indiscriminately, without advice of the profession—a grave mistake especially in heart diseases. Cardiac tonics are thus taken; and the resulting continued high arterial tension, maintained over a long period, may work disaster for the aorta. It is better to lighten the load of a jaded horse than to apply the whip; remedies which lessen the work of the heart are often more effective than cardiac tonics. When the balance between the two sides of the heart is effectively maintained drugs are, as a rule, unnecessary, except to regulate the blood pressure; when this is high decalcifying agents and moderate cathartics answer best. For cardiac failure such tonics as digitalis, squills, strophanthus, caffeine, strychnine and the lime salts answer best; their use should be discontinued immediately compensation is restored. For tendency to thrombosis or embolism such decalcifying agencies as phosphoric and citric acids and their soluble salts are to be used. In cases of thrombosis and pulmonic embolism with urgent symptoms strong ammonia should be freely used. (Ammonia and spirits of chloroform, aa five minims, in a wineglassful barley water every hour or half hour.) In mitral stenosis we may have free hemoptysis, which should not be checked; it is an excellent form of bloodletting. In all spasmodic affections, such as angina pectoris, the best remedies are nitroglycerine, morphine, atrophine, amyl nitrite, ethyl iodide and other preparations of iodine. With very high blood pressure, among a host of remedies Barr mentions especially decalcifying agents, the benzoates, the hippurates, iodine and thyroid.

Inoculations for Acne.—It is reported that in St. Mary's Hospital, London, injections of vaccines of the staphylococcus (upon the basis of Wright's opsonic theory) are being made with excellent results in the eradication of acne pustules; muddy, blotchy complexions are said to be thus transformed into healthy skin, the best results being obtained in acne due to sluggish action of the sebaceous glands. The vaccines are manufactured in the Hospital laboratory, and are supplied in glass bulbs, one of which suffices for three or four injections. Such treatment is, we believe, scientifically sound. The only trouble with the Wright procedures have been their intricacy and the length of time required for individual examinations.

Carcinoma of the Breast.—A. Bonner, (Post Grad. Feb., 1909) finds by far the greater number of tumors of the breast to be malignant, growing tumors after thirty, and especially between forty and fifty years are suspicious. Pain is not a very early sign of carcinoma. When a pre-existing tumor of long standing suddenly increases in size we must fear carcinomatous degeneration. Immobility of the tumor, with ill-defined borders, favors the diagnosis of malignancy. Though retraction of the nipple may occur in chronic atrophic mastitis, such retraction is strong presumptive evidence of malignancy. Nor does the absence of a retracted nipple contraindicate the existence of malignancy—in such cases the tumor will be found at a distance from the nipple.

Ascites.—T. Soyesima (Deutsch. Zeitschr. f. Chir., April, 1909) reports three cases in his service in Kyoto in which he followed Ruotle's method of treating chronic ascites with cirrhosis of the liver by suturing the peripheral end of the saphenous vein, severed 8 c. m. above its mouth, to the peritoneum just above Poupart's ligament. In the first case, a man of 38, the patient feels constantly well, with no return of ascites after the operation a year ago; in this case omentopexy, decapsulation of both kidneys and continuous abdominal drainage had failed to cure. In the two other cases the ascites was the result of pericarditic pseudocirrhosis of the liver; here none of the operations done, including the Ruotle, gave relief.

"Neurological Syphilis," considers Prichard (New England Med. Mo., April, 1909), is the diagnosis in the case of a patient between 25 and 45, afflicted with any form of intracranial paralysis or cerebral disturbance, preceded by headaches of nocturnal onset or exacerbation, associated with vertigo and insomnia (the insomnia occurring during the first half of the night), the paralysis developing during sleep, both headache and insomnia disappearing upon the onset of the paralysis. In such circumstances the usual cause is syphilis.

MISCELLANY

In Acute Rheumatism the site of entrance of the specific organism is the tonsil in a large proportion of cases.

Iodides should not be taken after meals; they may with the starch in food, become converted into iodide of starch.

Carbuncles on the neck, on the shoulders, or in the scapular region, are often present in diabetes mellitus. They are not positively diagnostic, but should awaken suspicion.

A Port Wine Stain, covering nearly half the face was cured by J. Donald (Brit. Med. Jour.) by means of the x-ray. This cure has endured five years. No notable scar remains.

Cigarettes are to be barred from the navy. Quite right; they are bad, especially for the middies. Besides there is the extravagance; the cost of 1,000,000,000 cigarettes would pay for a Dreadnaught.

The Cough of Pneumonia. Preble (Lancet-Clinic) uses the carbonate of guaicol in five grain doses; and if the sputum is tenacious adds apomorphine, one-twentieth grain four times a day.

Removal of Stains.—Stains of aniline dyes may be removed from the fingers with strong hydrochloric acid, stains of iodine with aqua ammonia, and stains by silver nitrate with potassium iodide solution.

George Clemenceau, the French premier, who is also a physician (having begun his practice in New York), is a total abstainer. He is said to have the Spartan habit of rising throughout the year at five, and to begin work at once.

Coffee and Uric Acid.—Besser (Therapie d. Gegenwart, July 1, '09) confirms by his researches the fact that part of the caffein and theobromin is liberated as uric acid; that consequently coffee is one of the purin-containing substances injurious to the diet.

A Prime Adjustor.—The reading of Eber's romances from the story of Joshua down to that of the Emperor Hadrian, observes Dr. G. L. Walton in Lippincott's, is of great assistance in adjusting into the mental perspective the petty annoyances of to-day.

Treatment of Heartburn Due to Retention of Gases.— Patients are advised to practice taking a small quantity of water in the mouth, holding back the head, and swallowing. This will cause any gas in the stomach to be eructated, says Herz in the Revista de Sanidad Civil, Madrid, July 10, 1909.

Cocaine.—The Lancet-Clinic states the opinion that not more than half the cocaine consumed in this country in 1908 was devoted to legitimate uses, the greater part of the total being supplied to "dope fiends" and the dens where the victim is harbored. These dens show each year an alarming increase in number.

Tuberculous Eye Affections.—W. Löhnlein (Medic. Klin., July 11, '09) finds by the new tuberculin tests that tuberculosis is much more frequent and important in eye affections than has been supposed. The ocular test is disapproved of; the cutaneous test should first be applied; a negative reaction of which excludes tuberculosis. The subcutaneous test is most valuable and reliable, and following the cutaneous test we get a surprising insight into the nature of ocular lesions.

Molluscum Contagiosum.—F. C. Knowles (J. A. M. A., Aug. 28, '09) finds this to attack usually the face, in most cases on or near the eyelids. Children are more susceptible than adults. It is difficult to explain epidemics on any other than a contagious basis. The cause and the incubation period are still to be determined; as coccus has been isolated in a few cases. The incubation is "from a few weeks to many months." It appears that the skin does not have to be broken for the infection to occur.

Trigeminal Neuralgia.—K. Birdinger (Deuts. Zeitschr. f. Chir., June, 1909) reports a complete cure for three and one-half years after an operation for recurrence a few months after a primary peripheral and ineffectual operation. The oval foramen was opened, the neuroma-like enlargement of the central stump was released from its confined bed, and the nerve resected from the base of the skull to the ganglion. The oval foramen was then plugged with bone to prevent regeneration.

Municipal Playgrounds, places for the young to play and develop their lungs by exercise, are becoming one of the big items in a city's budget, states Hygiene and Physical Education. Chicago, for example, has spent eleven million dollars on a system of playgrounds and recreation centres, containing outdoor and indoor gymnasiums, swimming and wading, shower baths, swings, slides, ball fields and rooms for lectures and social meetings. "New standards have been set up in neighborhoods that knew them not, and the benefit is accounted so great that the cost of two dollars per $1,000 assessed valuation of the property benefited is regarded as an ideal investment of the city's income."

Physical Culture in German Schools.—Every public school in Germany, states Prof. Volze, superintendent of physical culture in the public schools in Frankfort, has a gymnasium and there are hours on certain days devoted to physical culture for both boys and girls; instructors are paid by the city, and the halls and apparatus are also maintained by the various communities. These exercises are just as regular and necessary as arithmetic or grammar. "The welfare of the nation depends more on the strong and healthy citizenry than upon a highly educated one; still better when the two qualities can be combined, and that is the principle of the German school system." Swimming is also taught in the German public schools; all children must become proficient in this art.

Ovarian Transplantation.—G. A. Casalis (Jour. Obst. and Gynec., London, May, 1909) transplanted in 1905 the sound portion of the left ovary in a woman aged 26, on whom he operated for adherent retroverted uterus with double tubo-ovarian disease, due to gonorrheal infection. The patient has menstruated more or less normally since, but latterly crises of an alarming character have preceded each period: there are violent headaches, intense abdominal pains, several severe rigors, cyanosis of the face and extremities, the pulse almost disappears, there is incessant vomiting and frequently one or two offensive movements. Then there is a reaction with perspiration, flushed face, full and bounding pulse, upon which the menses appear. Casalis regards these phenomena as of an early surgical menopause: the ovary is undergoing retrogressive changes.

RELUCTANT PREGNANCY.

BY GEORGE B. H. SWAYZE, M.D., PHILADELPHIA, PA.
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THE delicate province of obstetrics brings the physician into close touch with the most prominent and important results of the marriage relation. Over the size of generated families hover the wings of parental devotion, swings the shuttled loom of supporting toil, poises the available endurance of vital energy, or contrariwise, project the domestic stubs of repugnance to the experiences of repeated child-bearing.

Limitations of the number of offspring constitute the flexible pivot around which revolves the momentous problem of "race suicide." Along average planes of society few children are desired. On the mischance or mishaps of human sexual copulation mainly depend the incidental frequency of pregnancy among the more intelligent and alert class of inhabitants. And there, amid the loops of subtle knowledge and physical ventures lurk the snares that cause the reduction of living births after the fact of pregnancy among the wide-awake of our American people. Prostitution is reported to be "the social evil." But abortion is the guillotine of social murder of innocents who, blotted out of existence in the bud, might have fulfilled service to the world and otherwise might have reaped enjoyments available in general spheres of life.

As the lineal stock of our representative American families is becoming voluntarily more limited, decreasing in active numbers, dwindling toward the blank of effacement in the affairs of the country, by so much, consequently, the unrestricted progeny of the underfed ignorant toilers, the underrated "mudsill" grade of population, the encroaching offspring of the prolific Negro, of the stoic foreign representatives of recent immigration more and more profusely encumbering our shores, must naturally supplant the best of our native American prestige in public morals, in national loyalty and political adhesion to the progressive ideas that have built the unity of this country. The patriotic enterprise of recruiting American population with the blood of American citizenship is being gradually shifted to the lusty sexual output of foreign breeders, Americanized, who have not grown "smart" in the limitation of family births. The Jew, the Russian, the Hungarian, the Italian complexion is to-day darkly outshading the Americanized descendants of the English, the Irish and Scotch, the German and Swede along the active highways and byways of industries opened to the world by our enterprising countrymen. This backward lapse of national progress hinges on the fact that our educated, restless, esthetic American women have preached to womanhood the subtleties of emulating manhood in the guise of worldly spheres, and have developed among the masses an ethical, almost a constitutional reluctance to pregnancy. Thus the incomes of labor have drifted from the reach of most of our native toilers steadily growing fewer in number. And which way we turn along the avenues of modern industry, the jargon of foreign tongues, the dense stare of foreign eyes, appeal to our sense of concern for the future of the home of the brave of the past. And while these illiterate refugees from the purlieus of Europe are working for less wage here than Americans could support liberalized families on, if their humble lodgings be interviewed it will be seen that their wives are crowding their doorsteps with swarms of children to grow to adult life and elbow their way amongst us.

The difference between the reproductiveness of our modern American women and that of immigrant women from other countries is not one of declension of sexual capacity in contrast with sexual activity. The difference hinges on the fact of voluntary curtailment of pregnancy by the reluctant class. Diminished births does not mean increased natural barrenness among our women—as so many speculative writers occasionally babble. The problem of human fruitfulness is not gauged by lack of sexual function but by lack of consent. Our native born and our foreign born women alike experience the evolution of their monthly ovulation and menstrual flow. But our knowing women reject the process of conception—while the unsophisticated methodless ones receive and retain the seed of propagation that bends them to the laws of repeated child-bearing. Of course we have not now in contemplation the families of kings and emperors, where the incentive for numerous progeny is supreme—where munificent support is derived from the public treasury—where it is political diplomacy for thrones to propagate endless chains of heirs to clasp the permanence of royal inheritance. In that class of cases, every marriage, every additional child, implies extension of succession, wise or foolish, to the pampered prowess of sovereign power. Therefore, presumably, for State reasons, abortion is a tragedy unknown among the families of national rulers of Europe, whose ample incomes flow from the substance of their subjects. The contrasts between the opulence of imperial accouchement and that of the drudging slave of pinching toil and daily necessities of existence cannot be measured by the weaklings of printed phrase. Therefore, in view of the expansive type of education of children by the wealthy on one hand as reckoned against the meagre mental and manual outfit of the striving but proud poor and working class on the other hand, we are getting significant glimpse at one of the greater incentives to reluctant repetition of pregnancy.

Uncounted women have said to me like this: "We find one child as many as we can afford to raise and educate." Or again, "Two children are plenty enough for our means." Or another: "What is the good of bringing into the world of worry and struggle more children than we can properly support?" Or yet again: "Who knows how children are going to turn out in these reckless days!—it is a sin to bring them here to be a disgrace to their parents!" It is the prevalence of reluctant pregnancy that promotes the obnoxious business of the abortion craft. Without some call for trade there could be no trade. If every woman who by chance became pregnant, (for very few become pregnant by direct purpose), was satisfied to carry the fruit of her womb to its maturity and then gave to it living birth, there would exist no forced miscarriages to record except in such malformations as render living childbirth impracticable. By way of interesting digression, however, there is a fact worth remark relative to the possibilities of successful deliveries of living babes in contracted pelves. More than one mistaken doctor has impressively declared to the woman after the struggle of instrumental delivery of a dead babe: "You can never give birth to a living child!" but who, nevertheless

less, lived to learn the contrary fact. I recall, when in practice in the coal region, the case of a Welsh girl about twenty with whom I had labored twenty-four hours. After sufficient dilation, the head was there, but recoiled by rotation from the lower bony strait with every pain. The patient was about worn out—so was I. The forceps were unavailable to clasp the head—so little space! About midnight I called to my assistance an old German doctor of longer experience. At once he agreed with my conclusions. I had there the full set of instruments which he did not possess. The operation of craniotomy was decided on. Then occurred an impressive midnight scene. Each member of the family was called by the sufferer to her bedside, taken by the hand, and bidden good-bye, perhaps for a last farewell, while we doctors waited to perform the proposed attempt to save her life. The room was then cleared. With our instruments we penetrated the soft skull, next broke up the bones piece by piece, until sufficient space was made for forceps to clasp over the remains of the head and the child of little more than ordinary size extracted. No untoward feature followed to retard recovery. Her young fellow, who had deserted her by enlistment in the army, returned, married the girl, and in due process of nature, she gave birth to a healthy babe without instrumental aid. Six months later I was called to assist another physician in charge of first accouchement of a robust young Irish woman. The doctor was literally fagged out by unavailable efforts with his large long-handled forceps. In his note by messenger calling me, he had requested me to bring my forceps—which were the neat Davis type. I performed craniotomy for reduction of the head sufficient to permit the grasp of my forceps. With hook caught inside the edge of skull by which the doctor could draw, and forceps clasped over outside of the skull to be managed by myself, we delivered the large bodied inanimate infant. Relieved of her burden without accident to herself, the woman recovered in ten days. I doubt that she needed instruments at next labor.

The voluntary murder of unborn infants in civil society is the most atrocious of human crimes. The number of its commission by concealed procedure is "legion." Most unexpected instances occasionally leak to light. For instance, a pastor's wife of ripening years, but who held to material views, considered that the intervention of a baby of her own would interfere with the circle of her social functions,—was reported ill for a fortnight. The knowing sisters whispered that she had a "miss" believed to have followed a reluctant and interrupted pregnancy. Her husband died childless. The dignified wife, therefore, had two less in number to add to her womanly concern! And the risks faced in resolution to avoid the encumbrance of young children or the disrepute of giving birth outside the customary limits of marriage relations are without parallel. The impulses that underlie the sternness of their determination are like wayward breakers upon sullen coasts. "My husband is too lazy to work to support a child! I have to go out to earn the living myself now! When these things come I've no time for them—I send them flying higher than a kite!" exclaimed a venturesome woman in my hearing. In answer to my question: "A rubber syringe will do the work for me." But unlike the unmarried woman, this lady possessed an obliging type of physique. She had two children by a former husband. The uterine neck was relatively soft and open.

A well-dressed woman, accompanied by a girl of perhaps nineteen, one day entered my office. "This is my niece," said the elder. "She is in trouble—and we want you to help her out." Both women looked calm and business-like as though about to be fitted with a pair of bargain shoes. Both were strangers to me. "What do you think is wrong with your niece?" I deferentially inquired. "Why, doctor, she's missed her turns for three months now; I suppose she's in a family way. She expects it's so herself; and she's not married. We want you to take her in charge, and get her all right before it goes further." "Who directed you to come to me?" I asked. "Well, doctor, you are not exactly acquainted with the person," was answered, "but she said you was very kind and careful, and so we have come. We are not poor; you will get well paid." I looked at both. Did they comprehend the hazardous ordeal they offered me to undertake? "Your adviser, whoever it be, has a mistaken impression of my line of service. I never touch a case of this kind for the purpose you indicate. You evidently propose to have me destroy innocent life. If you were Queen Victoria, madam, and this the favorite princess in your family, I could not be induced to cause for her a miscarriage, if, to do so, you would give to me your entire kingdom. Besides it is a state's prison venture you would have me undertake! Why does your neice not marry the man with whom she has been so friendly, rather than take this dangerous risk?" There was no relent in the quick answer: "Oh, she's young yet. We don't want her to be married yet. It's time enough for that later." Nothing daunted, the madam rose: "I'm sorry, doctor, you think you cannot help us. Can you recommend some one else to do so?" What a trap! "Indeed, I cannot. I'm not acquainted with that class. Besides, to do so would only make me a party to punishable crime—and prison gates are not attractive. Good-bye, ladies."

Another sample case. A married woman, yet young, who in former years had been my patient in accouchement, came several miles to enlist my interest in relieving her of an unwelcome pregnancy. She had several children already to be cared for, and had resolved to not add to the number. I reverted to the safety of her previous labors, the pleasant circle of her little family, the dangers she might incur by venturing a miscarriage as proposed, the possibility of luck turning adverse and even leaving the children she already had motherless—as had happened to other women who rashly rebelled when finding themselves bearing a developing life; also the compromising attitude any respectable physician assumed who ventured to violate the laws against causing abortion. At this stage of my friendly remonstrance, she asked for a glass of water as she swooned at the picture. When she had rallied, she said that her husband, having confidence in me, had sent her to me for help. I said tell your husband that merely talking about a miscarriage had made you faint in your chair. What could he expect of you in the actual attempt? She went home. But following the set purpose, next day I was visited by the husband who took me to task for not consenting to do something that would release his wife from her unwelcome burden. I would accept no argument. He

then rose to his feet, saying: "Doctor, I thought you was a friend to our family!" (I had attended his father's family also). I rose also with the reply: "I *am* a friend to your family—both to the born and to the unborn!" That silenced the parley.

The performer of the abortion violence is seldom revealed except in the face of the awe of approaching death. One agent does the deed behind the veil of secrecy—then another is called in to pull through in professional way the succeeding emergencies of fœtal delivery. In a distressful case, as revealed by the patient, a young Hebrew doctor, by solicitation, tried his sleek hand at destroying her pregnancy by the use of an elevated fountain syringe with nozzle introduced inside the uterine neck. When aggravating pains and hemorrhage had set in, he responded to one call. Hurriedly prescribing some drug, he shook hands with the agonized young woman and bid her good-bye. The case grew worse. At eleven p. m. he was personally called for. At twelve, midnight, again called for. At both times, in excuse, word was returned: "Not at home." Unwilling to allow his reputed wife to die in neglect, the man rang me up at one a. m. and begged that I come to their house at once. It looked as though the flooding woman must die. There was nothing in reach of the finger that could then be delivered. With tamponing with astringent alum the wasting of blood could be temporarily held in check; but the womb was yet too firm in its grasp to warrant forcible dilatation for scraping away the placenta. The unpreparedness and horrors of reckless abortion were before me. Another had started the massacre and then deserted. Mentally began to prepare for possible coroner's investigation. Called in a neighbor physician to corroborate the situation. He kindly took turns with me in guarding the emergency. Unless moderated by morphia the pains were goading. In about twenty-four hours the os slackened by natural process sufficiently to reach and remove the embryo with the trained finger. The patient made reasonable recovery, hence no inquest, and nobody thought it worth the trouble to seek the arrest of the execrable young doctor who had executed the feat of an abortionist.

A passing glance at another perilous phase of rejected pregnancy. One of my youthful patrons, woman of medium size, married an expert draughtsman who won her a few months after death of his wife. Presently the new wife discovered unexpected revelations of hardness of nature in this twice married husband. He disliked the fact that she had become pregnant. Besides managing her little housework, she did his typewriting and attended to his business correspondence. The birth of their child was superintended by myself. The labor proved rather tedious and severe. The husband, meanwhile, was spending the hours in adjoining room, ostensibly executing a mechanical drawing. After the accouchment functions were over, and I had gone home, this new mother, as she affirmed next day, called the husband to her bedside and reproached him for so heartlessly allowing her to suffer so many hours in his hearing without once coming into her room for even to offer a word of cheer or sympathy. "What good could I do?" it was alleged he replied. "You might have shown me that much interest," she said. "Nonsense!" he retorted; "What is it, anyway? And what's the use of fuss? The woman must bring the child. She gives a few grunts—and drops it! That's all it amounts to!" With such stony rebuff, the new wife then and there resolved, in event of recovery, she would not further oblige that man's sexual graft for the mere reward of pain and brutal treatment. Hence pregnancy should not occur again.

But with most men nature's crave becomes imperious. The legal husband mollified the wife's asperity by bringing home to her that ingenious little "baby jumper" known as the French supporter, a soft rubber diaphragm to be inserted over the uterine os ante coitum, as preventative against conception. In time, however, it was discovered that the elastic partition had a side-door to entrance. Pregnancy therefore again frowned on the prospect. Exceptional women are prone to confidentially talk with other exceptional women on the most human of subjects. An incidental acquaintance had been struck with a widow who, to rescue reputation, found it necessary to be relieved of a gainless foetus that had come her way thirteen months after the accidental death of her husband. This neighbor had a method of release ready to mind by the use of a goose quill passed into the nested obtrusion, and she accomplished it. Detained a few days in bed—and the incident was over. Thereupon she suggested to my former patron resort to the goose quill barrel for killing the intruder by the side-door of the rubber invention. Lacking courage of self-infliction, the new wife sought the agency of a woman M. D. abortionist, who for a fifteen dollar fee, furnished by the husband, caused the wished-for miscarriage. Surviving that daring risk, the demon of murderous venture hardened his grip, and three times in succession, it was alleged, this wife got rid of rejected pregnancies and thereby faced what she termed "going the voyage" by the willing but villainous agency of the same doctress—who succeeded in keeping her innocent looking sign on her window sill because her cases escaped death and she therefore evaded arrest. After the deed her applicants were turned over to professional care of an obliging practicing physician, co-operative by courtesy, who would report nothing to any authorities.

We thus see how one venturesome woman disposes herself to copy the example of others in hazardous practice to repel the fulfilment of child-bearing function. The abortionist, also, grows hardened to the conditions of the murderous fee-making business. One successful performance strengthens the bloody hand to undertake the next. Law-breakers grow heedless to warnings. Only a month ago, in Philadelphia, a rather prominent physician running the gauntlet of chances, was held without bail for the death of a girl twenty years old, from illegal operation. His arrest was the result of an incriminating statement made by her when she felt the cold hand of the white messenger closing upon her. Heedless and hardened? This same doctor had been arrested just one month before on charge of causing death of another girl, eighteen years of age, by similar operation, and for this offense was being held under bail to await action of Grand Jury. Desperate? There is no creature so desperate as the woman who is bent on getting rid of a reluctant pregnancy. For over twenty-five years I have kept two old-fashioned steel knitting needles, brought me in a frenzy by a highly educated young woman who only feared she was pregnant from a couple of ventures with ardent

Amor where marriage was then out of the question. She came resolved that with one of these glistening implements I should restore the certainty of her moral status; but I declined to so use it. On weighing her history of customarily scant menses, and of the briefness of her amative experience, I persuaded her to relieve her acutely strenuous mind from the fury of probably too hasty an apprehension for another month, to encourage nature to recover physical balance. Released from the stun of sullen fright I believed her menstrual function would resume its usual regularity. My counsel proved successful. Dread had captured her limited monthly flow. Numerous similar cases among both single and married have shared my professional concern.

An unusually handsome young woman, favored with too ardent a lover, had yielded to solicitations, and missed two monthly periods. In her mental alarm she contemplated suicide by drowning. Was sent to me to see what could be done. Several propositions were made to her including marriage; but were rejected at the time. Physical examination did not make definite whether or not she could be pregnant at that time. I induced her to let the trouble rest entirely from agitation one month, since nothing could reveal itself to public notice before that time anyway, and, if not really pregnant, her menses would be afforded a rational chance to reappear at time for next period. She consented to accept my advice temporarily before jumping into the river. It was less than a month when her young man came happily to report that she "was all right again—nothing was the matter." Yielding sexually to the tempting embrace which might result in conception, though no pregnancy had followed, yet through awakened fear, and dread and remorse, many a suicide by woman may be comprehended. The reluctance to having been known as the mother of a child, however pretty and interesting, but born outside the marital bond of legitimacy, is a sentimental stigma that proud and sensitive natures will not overcome short of the mystery of death. It is for relief of such that humane institutions are exceptionally provided where, even under assumed name, the mischance maternity may be concealed from the scourging world, the passion-babe find rescue of honorable adoption in some childless family, while social repute is protected, no malicious abortion committed, no shocking death of "the unfortunate" to appal public ears.

Application was made to me by a lady, then residing in another city, for my assistance in obtaining for adoption a waif-child of promise from a lying-in resort of the specially private character referred to above. Mishaps of sexual ardor are not limited to the common or lower class. The love-passion is inherent in all normal mankind. Representatives from excellent and honored families may seek the temporary shelter which conceals a pregnancy and birth until after the objective physical evidences have vanished. In the fact of lineage, it is possible that the prospective mother in the retreat of temporary retirement is a favorite daughter of society; that the father of her developing child is the monied lion of his club or church or business; that the offspring, when born, brings to the world human elements of fortunate qualities for possibilities in life—certainly superior to those of a large per cent. of children born in routine marriage relations. So as I said, this lady wished to adopt for her own a waif-child of promise. Together we visited an institution to canvass the prospect. Were allowed private interviews with several of the expectant inmates, considered the evidences of the health of each, drew out history of herself and of the man in the case, and decided to await the closely due birth of a child by a neat little woman with whom we were both agreeably impressed. She seemed happy at the prospect of having her child cared for permanently with so favored outlook. When born, her babe was one of the handsomest and most promising of children. The interesting circumstances of this adoption led me to closely inquire of the lady who took the infant why she, not having served the needs of children of her own, desired to encumber herself with the raising of another woman's offspring? She solemnly replied that it was to relieve herself from the remorse of having destroyed three pregnancies by her own hand when she might have given birth to children of her own bearing—to love and care for. She impressively stated that she had been married young, to a husband whose former wife had died at childbirth,—that because of his horror of the event, he, fool-like, had induced the present wife to "make away" with her pregnancies as early as possible after conception, rather than give birth to a full-term babe. And that she had nearly died each time—had so injured her womb and constitution that now, after saddened repentance, when she wanted a child of her own, she had discovered that pregnancy was impossible. So long locally inflamed and sore, nerves shattered, physically disabled, she had also hoped that if she could have a child born the natural way it might improve her health. To my question as to her procedure she said she had been told that if a pregnant woman pushed a bone crochet needle into the womb it would "fetch it,"—had persevered that way each time—succeeded—but it had wrecked her for life. Now, furthermore, she thought her husband would feel more interest in his home if there was a child there.

The normal reasonable woman will not object to pleasureable satisfactions. Woman's grip of determination against unacceptable pregnancy is without parallel in nature. Was called one hot July day to visit one of my most intelligent lady patrons, mother of two interesting daughters. She was wife of a genial city editor whose habits were disposed to convivial excess. Lying upon a couch when I entered her room, the woman clasped and held my hand tightly for two or three minutes in appealing silence. The strenuous demonstration impressed on me a sense of deep or pleading meaning which words would not utter. With her grasp I also interpreted the presence of intense pain. Presently, without letting loose my hand, she raised her eyes to mine and said: "Doctor, you would not want me to have another child by my inebriate husband?" For five years I had been her family physician. We were friends. The recurring evidence of pain turned my thought to uterine colic—for she had not yet hinted that she was pregnant. "What does it mean?" I audibly queried:—"don't you think a vaginal examination is advisable?" "If you suppose so," she passively conceded. My deferent touch was made coy and gentle as possible. "It is evidently a pregnancy," I said. "Do you think that is what is the matter?—Will it be long?" Her double question settled the diagnosis. "It is strangely back yet. Nature

is not prepared, though your pains seem acute," was my tentative response. She made no reply to me, but called to some one near in the adjoining room, who proved to be a devoted nurse in readiness. "My back! my back! Nurse, hold your hand hard to my back!" she appealed. No turbulent murmurs were voiced. In comparative reticence and silence she clung to me as to a trusted rescuer during the succeeding hours of suspense and suffering till nature's struggle brought the fœtus and its adjuncts sufficiently forward to facilitate safe delivery. It was head presentation. I judged the fœtus was nearly four months. It was a boy. At the crown of its head was a deep puncture which had caused death; and at sight of which I then readily understood the meaning of that long, silent, appealing cling of her hand at greeting. Never a word or clue was spoken to me that revealed her secret. Knowing I had been depended on for trust, I sought no revelation. Put the dead fœtus away in safety till the husband came home from business. Conducted him to the bath room, unwrapped the miserable folly, drew his particular attention to the puncture wound found in the head, and adverted to the evident fact that if the aborted pregnancy had been carried to a normal maturity, he might have become the father of a son. "I see that," he impressively said; "I didn't want her to do this—but it's been done." Though rid of her conception, the woman continued distressingly ill a month with acute metritis, doubtless caused by wounds in the interior of her womb, inflicted either by herself or by another, with the instrument that punctured the brain of the unborn child. She lived to again become pregnant, refrained from the distress of interference, I attended at birth—but it was again a girl.

Why did I lead that husband to view the pierced head of the fœtus aborted by his wife? It meant that in case of ensuing death of the wife, he should with his own eyes comprehend the undoubted nature of internal injuries done in the process of destroying the life of their offspring. Worthy men engaged in obstetric practice, and who would retain the friendship of trustful patrons, cannot often afford to play the odious role of detective among their influential clients. They are called to help their friends. But in reluctant pregnancy, we see that their friends may have first sought another clandestinely, who, in cold daring, compound conscience for the price of blood. The initial offender in the odious transaction then gathers herself to her rooming haunts or to her home, and her respectable physician of good repute is then called in to soberly contend with the looming shadows of danger, and to assist assaulted, stabbed and badgered function to safely release from vital adhesion the purpling corpse of stricken fœtus, murdered inside its mother's tortured womb,—while the second offender, the nefarious but obliging abortionist, left to stipulated concealment, is excused from his or her share of responsibility in the crime, unless tracked through the accident of remorseful confession of the victim amid the awe of threatened dissolution.

But there is an entirely different phase of reluctance to the pregnant state. Will now cite but two instances. The wife of an important public official came to me in strenuous state of mind. She was correctly certain that she had become the possessor of an unwelcome pregnancy and had resolved that I must relieve her situation. Talked with her fully fifteen minutes to reconcile her to the reasonable patience of avoiding the dangers incident to resort to any violent means for blotting out the new life. "Then you can do nothing?" she finally said. "Nothing but to accept and receive with welcome what you think is now on its way. And when you go home, call your younger child, (a handsome little girl of three), to your knees. Gaze gently into her beautiful eyes a full minute, and think of what you and she would have missed in this world if you had been instrumental in having them put out of existence absolutely by violent procedure before she was born." That embryo child was born and became the joy of that home.

The wife of a coal operator and merchant in anthracite town, mother of considerable family, the older daughters already entertaining beaux, unexpectedly realized that she was again "in the family way." With excited agitation she insisted that "before there was life" I must spare her the humility and shame of having a baby at her age and when her elder daughters already were "keeping company." I explained to her that there was life from the moment of conception; but that the embryo had not developed enough strength to make its feeble motions perceptible to her before about midterm. That destruction of the embryonic form meant the murder of a developing child. At length she gave up her contemplated crusade to the natural logic of coming events. When time for confinement came, I astonished her by delivering a pair of pretty twin girls. How she then regretted having in hard-hearted way contemplated an abortion that would have effected a double murder of innocent babes! The anomaly of this double birth became the feature of the town. Nobody else was so suddenly equally popular, and the babes were the joy of the entire family. Again and again I was frankly thanked for interposing between the rash purpose of the mother and innocent lives. Heat of summer advanced. One of the little twin girls fell so ill of cholera infantum that it died. The sorrow and remorse of the stricken mother was now doubly intense. She felt that the Lord had sent punishment upon her by allowing to her the pleasure of the child until it became completely shrined in her love, then taken from her for punishment for having in her heart plotted against the infant's life by means of cruel abortion. One was taken—the other left.

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The Blood in Rickets.—L. Findlay (Lancet, Apl. 24, 09) finds that in active and uncomplicated rickets anemia is not the rule; when it occurs it is due to adventitious causes. In rachitic children, on the contrary, the amount of hemoglobin and the number of red cells in Findlay's experience, were notably in excess of the normal average. The red cells generally vary more in size than normally; but otherwise there is nothing unusual. Nucleated red cells, polychromatophiles and myelocytes are of rarest occurrence. In rachitic subjects there is little characteristic change so far as the leucocytes are concerned; they may be nominal, slightly increased or even diminished in number; the mononuclears more frequently that the polymorphs show an absolute increase in number per c.m.

THE INDIVIDUAL IN THE CROWD.

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THE changes produced in the individual by hypnotism illustrate well the difference between the normal and the primitive, elemental psychism. Before hypnotism the "subject" is in full possession of all his mental faculties; he is "king of all that is under his own hat." By hypnotism his higher brain centres are inhibited or held in abeyance; for the time being these centres are out of the circuit. The hypnotizer may then influence at his will the subject through the lower, less developed and more primitive centres. The subject then obeys him as implicitly as if he were a child or an uncultivated savage. According as the hypnotizer wills him to, he gives expression to the basal emotions—fear, hate, rage, blind devotion, blind reverence for unworthy objects. He exhibits the primitive instincts of cruelty and the desire to kill. He laughs or weeps immoderately, without occasion. Whatever ideas are suggested to him, however absurd they may be, become his own. Whatever he is told to do, no matter how foolish it may be, he does. He has lost all power to reason. He has become a mere machine in the hands of another. The hypnotizer pictures to him mental images and he sees them, although there are no objective realities to represent them. It is intimated to him that there are noises; and he hears them, although there are no such noises. He tastes, smells, acts in all things as his hypnotizer wills him to.

There are many factors which produce in the individual the same result as hypnotism does. Under their influence he loses the power of calm observation, of logical thought; he becomes non-deliberative and impulsive. He has for the time being at least, undergone reversion. He assimilates readily the ideas of others, however unreasonable they may be, however foreign to his normal ratiocination; and he proceeds in accord with those among whom he is associated. A decided loss of personal dignity is a concomitant of these generally retrogressive changes. Among the factors thus transforming the individual are suggestion, imitation and the force of inordinate social excitements.

Suggestion is the "insinuation of a belief or impulse into the mind of the subject by any means, as by word or gestures, usually by emphatic declaration." The art in suggestion lies in the ability to present an idea in such a persuasive, convincing and apparently natural light as to command the subject's assent. The process is well represented in the everyday expression: "What made you put that idea into his head?" The "new thought man" works by means of suggestion when he strives to impress upon his disciple that he must "hold the thought" so and so. There is nothing occult about this process; and decidedly nothing new; it is as old as that transference of the apple in the Garden of Eden.

The essential difference between suggestion and hypnotism is that in the latter the subject arranges beforehand to submit to the hypnotism.* He is generally fully aware that he is about to undergo the process. Suggestions are more often than not implanted in the subject's mind when he is unaware of the transference; the act of reception may be involuntary. In suggestion, what has been called the subconscious or subliminal mentality, which it were no doubt better to denominate the sub-attention mentality, often receives an idea the conscious mentality may be oblivious to.

We are here dealing with baneful mental influences. But by suggestion salutary as well as unwholesome ideas are imparted. The art of suggesting healthful ideas is one of the most important weapons in the physician's armamentarium. This is another way of saying that he has inspired faith in the patient. When he states his conviction that such and such a symptom will disappear and that he will find the patient better to-morrow, he suggests the idea of improvement which belief in his statement impresses upon the patient's mind. When next he declares his expectation that the patient will be able to sit up on the following day, the suggestion stimulates the latter's latent energy to the extent of realizing the expectation. When then he declares he will be much disappointed if he does not find the patient awaiting him in the sitting room on the occasion of his next call, the latter is aroused by the same processes to the point of obeying the suggestion.

As to the mind's receptivity toward the suggested idea. First, the idea is presented to the individual mind. If acceptable it is at once assimilated. But it may be considered absurd; or its moral value may be questioned. However, if the presentation of the idea be repetitious, it may earn reflection; will then be pondered upon; the mind will become accustomed to it; and will in time unreservedly accept it. It will then sink from the conscious to the sub-conscious (or the sub-attentive mind) where it will remain firmly housed, despite all efforts of reason to eject it.* At this stage the individual may strive to bring all other reflections in conformity with this idea; but be this process successful or otherwise the idea once well quartered will maintain a secure habitation. When such an idea has come to dominate the individual, it will by suggestion become instilled in the minds of others, until a mental epidemic, based upon it, has come into being. And, as we shall see, such mental contagion will affect the minds not only of the dull and stupid, but of the intellectual as well. During such psychic epidemics in minds thus affected, no matter of what calibre, reason becomes dethroned and the blind idea takes its seat. Many happenings due to imitation occur constantly in life. As simple an instance as may be of the influence of imitation is to be found in the act of yawning. A familiar—and quite diverting—test is to yawn in a street car. The people in the opposite seats who see the yawn will presently yawn themselves. Whilst writing this I have stopped to yawn. And I warrant my colleague is by this time yawning also.

We have now reached the point where the explanation of these phenomena resulting from suggestion and imitation is quite simple. There is the perception of the external phenomena; then there is the impulse through the sensory nerve to the lower centers and thence upward through the spinal gangliar to the higher centres in the brain cortex; then the excitation of this given area in the cortex, which excitation is character-

*In very rare cases hypnotism may be appropriate. As a general thing its use is to-day reprehended by physicians. Many a hysteric has been made decidedly worse by this means. The process is, however, essentially physiologic and not at all occult as some unprincipled "healers" would have their subjects believe.

*These observations are based upon the Le Bon (Gustave): The Crowd, a Study of the Popular Mind.

ized by an excessive determination of blood; then the mental command obeyed by and carried out by the motor nerve; and finally the resulting muscular action. Many of these controlling areas in the brain are now definitely located by science (after wicked vivisections, mostly upon dogs and monkeys). One area controls the movements of the arm; another those of the leg; another of the muscles in the neck. Has a man received a blow on the head; and in consequence does this member lie limp and paralyzed? There has resulted a ruptured vessel and a pressure of the escaped blood upon the given area in the brain cortex. The surgeon locates upon the scalp the precise location of the clot, trephines, removes it and relieves the cerebral pressure; upon which the leg is restored to power. Does an epileptic manifest twitchings of an arm? This is due to the irritation of the brain cortex at a given point by an adhesion of the dura mater or an inflammation. Upon trephining over the given point the twitching of the arm ceases. In like manner one sees another jerking or rolling or violently contorting his neck. By suggestion and imitation the impulse is conveyed to the brain cortex, and thence by the given motor nerves to the muscular apparatus. These muscular movements are thus due to the nervous explosions combined with congestion of blood in the centres which control the given muscular movement. Thus when one impressionable individual sees another doing a certain physical thing, he immediately performs the same act, the stimulus having been transferred to the like area in his brain controlling the muscles employed in that act. Epidemic chorea has no other physical foundation than this; and many of the protean manifestations of hysteria are generally to be explained upon this basis, as also many of the contortions of the flagellants, the convulsionnaires and the like in the past.

We here reach a further and most important consideration. These aberrations of the nervous circulatory and motor machinery are attended by and do themselves occasion an inhibition of those highest and latest developed psychic attributes, those supremest human attainments—reason, will, intellect, judgment and coordination. For the time being at least the individual has become primitive; the primeval instincts and emotions are in absolute control.

There remains now for the individual to be influenced by inordinate social excitements. And here we shall find with Le Bon that "the mental quality of the individual in the crowd is without importance. From the moment they are in the crowd the ignorant and the learned are equally incapable of observation." The philosopher and the clodhopper, the statesman and the criminal, the man of affairs and the man in the street become alike as the unruly child and the untutored savage.

Such are mainly the factors by which the individual in the crowd undergoes transformation. Let us amplify upon them:

It is essential to note that masses of people may by these factors be impelled to demonstrations altogether worthy, though instances to the contrary are sadly aplenty in history. The crowd may perform acts of generosity and courage, of which the individuals composing it would certainly not as individuals be capable; the crowd would be lost to reason either for supermannish flights or in debasement. An instance to this effect was the popular behavior during the kidnapping and recapture several years ago of a very little daughter of modest, unknown parents. Throughout the country people gathered in crowds and manifested the greatest indignation. The excitement spread until, when the child was found and returned to its parents, there was jubilation over all the country, from New York to San Francisco. Great crowds gathered in the street in which this home was. They cheered tumultuously, and again and again required that the mother appear at her window and hold up to them the little girl who had been restored to her. One of the great reasons, indeed, why Eddyism, Dowieism and like hypocrisies attract so many honest and devout people is the impression that such movements must be good and wholesome, since they invite adherence in the name of religion.

Examples of the pernicious influence exerted by these three factors singly or in combination will be recalled in everyone's reading and experience. Medical students are very apt to consider themselves suffering from any disease which for the time being occupies their attention; and an examination by their professor is often required to dispel the illusion. The following rather overworked example—I have seen it in print several times—is very *apropos* here: A Washington newspaper correspondent, writing of a recent Congress of the Daughters of the American Revolution and its disorderly meetings, says: "It is the unanimous opinion of those who have attended the Congress that, while the Daughters of the American Revolution, individually, are nearly all intelligent, refined and attractive women, collectively they are an uncontrollable mob."

In dipping into Plutarch the other night, I came upon this: "Many historians have described this battle; but Xenophon has done it with such life and energy that we do not read an account of it: we see it, and feel the danger."

I recall my sensations when, as a private in the Seventh Regiment, I obeyed for the first time the order to "charge with a yell." I had but lately been advanced from the "awkward squad" to the full company. Beginning at the furthest side, we were to run as fast as we were able across the vast floor of the armory, with bayonets fixed, and yelling our utmost, to the wall opposite. Of course, no men were there to engage us; there was only a wall, above which was a balcony. This was filled mostly with bright-eyed girls, whose mellow, winsome smiles generally accomplished the business of straightening our shoulders and bringing the flush of soldierly pride to our cheeks. The situation was one in which a man would do his utmost to appear the opposite of asinine. However, we were to rush madly upon an imaginary enemy, yelling like demons the while. The proceeding appeared to me inane in the extreme. And, upon the order being given, I advanced in an apathetic lope, emitting an altogether unconvincing sound, and handling my rifle with the airy grace of a dancing bear balancing his pole. But, before I had half traversed the ground, all this self-consciousness was lost. I saw the officers shouting to us, brandishing their swords above their heads and urging us forward. My fellows were yelling furiously, and were each trying to out-rush the other. The reverberation from the shouting and the running was tremendous. I became greatly excited. I rushed with all the speed I

was capable of, yelled with all my might, and finally collided violently against the wall.

In the ranks with me were a clergyman, a theological student, several physicians, a magazine writer, lawyers, brokers and ordinarily level-headed business men. It would be difficult to find anywhere, outside the Seventh Regiment, a company of men of average physical health and mental poise equal to ours. However, in chatting afterwards with my fellows about this sham charge, I found that the emotion of fury and the combative instinct, which grew upon them as they advanced in the charge, were akin to mine. And I have read that, in sham battles after such charges are ordered, soldiers have often to be prevented from inflicting substantial injuries upon one another, so easily is the primitive war instinct aroused. There was really no need to adopt the proposal of a Russian General of realistic tendencies that in sham fights one soldier in ten should be provided with full instead of blank cartridges, so that zest and verisimilitude should be given the ceremonies.

The Anti-Semitic mania in France resulting in the Dreyfus affair illustrates well the influence of these factors. We realize, those of us who have not been drawn into the Anti-Dreyfus maelstrom, that against this man there had not been established the slightest proof of crime. The persecution of him was prompted by primitive, brutal, unreasoning race instincts. Freed of the influence of social and racial afflatus, the isolated Frenchman, who is as much a lover of fair play as is the citizen of any other country, would surely acknowledge this stupendous injustice.

Some years ago a negro shot a policeman who attempted to arrest him. His having to pay the full penalty for this deed was as certain as any human event could be. Nevertheless a race riot ensued. Absolutely harmless, industrious, law-abiding negroes were struck with deadly weapons, stamped upon and innocent colored women returning from their work were shamefully attacked. Street cars on crowded thoroughfares were stopped and inoffending negro men and women were dragged from their seats, over the laps of other people, and were nearly murdered by brutal mobs. Next morning these whites, upon calm reflection, must have wondered how they had come to be seized with such insensate frenzy. And this happened, not in any one of our Southern States, but in New York, the city most advanced and most representative of civilization in the Western Hemisphere.

I suppose no individual Englishman would care to boast much about the late Boer War, in which the mighty British Empire was arrayed against a handful of rude, uncultivated farmers; in which the conditions were as if "ten men armed to the teeth were contending with one man in a shirt." Yet collective England, Aristocracy, middle class and all the rest of it, went wild with exultation "when Majuba Hill was avenged."

It is said that certain Englishmen, while exploring, or during military service in the heart of Africa, became guilty of most inhuman conduct. These men were at home looked upon as gentlemen of the finest calibre. And so they surely were—in England. But amidst their barbaric surroundings, and being no longer held in by the restraints of civilization, their finer sensibilities were paralyzed, and they themselves reverted to primitive conditions. The brief careers in the French Soudan of Captains Voulet and Chanoine are worthy the attention of the student of human evolution. No doubt both these men behaved very well indeed while in France and at home. The latter was, I believe, a member of a family very old and in the best and loftiest sense aristocratic. Yet under their environment in Africa they became guilty of barbaric cruelties. A native was beheaded because he declared he did not know a road about which he was being questioned. Voulet is said to have captured eighty natives, among whom he killed twenty women and children. Chanoine burned a village and captured twenty of its inhabitants, ten of whom he killed, placing their heads upon pickets. Both these men were eventually killed by the Africans. It has, indeed, taken many centuries for mankind to advance from savagery to civilization; complete relapses are practically instantaneous. The "water cure" perpetrated by our troops in the Philippines furnishes another illustration.

It is related that missionaries to the Chinese have in various localities in that country spent many years in improving the condition of these people and in uplifting them. They have established schools for the better education of Chinese children. They have, by persistent teachings through long periods of time, induced them to substitute for superstition the habit of accounting for physical manifestations upon scientific bases. They have taught them the value of sanitation, hygiene and clean living in producing health and happiness and in dispelling disease. They have established hospitals upon modern principles. The sick among them have been nursed with devotion, and made well with consummate skill. Surgery has been practiced among them with results most marvellous to them. The missionaries have really won their hearts by their loving kindness, their self-abnegation and by the lofty altruism they evidenced. Then all of a sudden some blatant creature among these people, probably more ignorant than most of his fellows, will harangue them. The result will be as if a thunderbolt came out of a clear sky. His demagogic appeals will incite them to frenzy. All that has ever been done for them, the many years of work in their behalf, will be forgotten on the instant. Within the hour, as a child would by a wave of the hand demolish a house of cards, these people will destroy the schools, set fire to the hospitals, kill, if they can, their benefactors, and revert to their savage condition of many years before.

In our day there is pathological religion precisely as in other human eras; with not only the purely psychic abnormalities but also the deplorable physical manifestations resulting from the abnormalities. To-day there are no whit less remarkable, no whit less deplorable to truly religious natures than were those recorded of such "religious" movements in other centuries.

To emphasize the matter let us quote the graphic picture presented by Prof. G. Y. W. Patrick, in his paper on The Psychology of Crazes in the Popular Science Monthly for July, 1900: "The interest in these meetings spread in true epidemic form. The emotional tension was very great. A boy perhaps would spring to his feet and begin to rave, or some over-excited person would utter a piercing shriek, or a cry of triumph, and this would be the signal for a general hysterical outbreak, accompanied by many remarkable physical symptoms. Of these the most com-

mon was falling in convulsive spasms, jerking, dancing, barking like dogs, fainting, crying, singing, praying and cursing. Sometimes whole companies were seized with uncontrollable laughing fits,—the holy laugh. In many instances sensibility would be lost and the extremities would be cold, while the face was flushed. Examples of reversionary morals in such epidemics are that "in response to visions many men put away their own wives and took others from their neighbors."

The moral irregularities characteristic of such epidemics was fully displayed. Changeableness, impropriety, oftentimes cruel conduct, fanaticism, blind devotion to demagogic leaders, erratic religions impulses, the absolute abdication of the intellect. The instinct of religion is primitive and fundamental in man's nature. One element in its evolution is our dread that death is possibly another name for total annihilation; that possibly at death, as we see it, the soul may be destroyed, as well as the body. The doubt inherent in this is impressive enough to us when we are normally-minded; it becomes awful and terrifying in periods of morbid excitement; and helps greatly to intensify emotional insanity in these religions revivals.

Let us consider this matter soberly. We are much too prone (there seems to be a well-nigh universal observation in this regard) to reprehend any criticism of ails done under the cloak of religion; we are not to approach things so sacred. Whatever appears to be imbued with the religious spirit will receive the respect and the attention of the piously-minded. And many worthy people conclude that such movements must be good because they invite adherence in the name of religion. This is one fundamental reason why a Simpson can relieve his crowded audiences of their millions, how a Sanford or a Dowie can degrade the multitudes subject to their baneful influences, how a "Truth" can gull his thousands, and how Eddyism has come to be the most pernicious and the most prodigious social and religious falsehood of our generation. Such attitude has oftentimes been most subversive of human happiness and—what is more—human well-being. It is not because one is irreligious, but because one, on the contrary, is by nature religious, that such dreadful phenomena are reprehended. It is possible for religion, as well as any other human emotion, to become pathological, all the more by reason of the unusual intensity this emotion oftentimes attains. The religious emotion is instinctive, primitive and fundamental in man's nature; and that is why when it becomes excessive or abnormal it oftentimes becomes perverted and translated into cruelty and lust. Pseudo-religion, lust cruelty; these basal emotions are oftentimes interchanged—with consequences fitly stigmatized only as just hellish.

Religion should bring us into the comforting presence of the Infinite. Of all the emotions it should be the most potent to make men and women kindly and decent. Yet it is a most extraordinary and most pitiful phase of human nature that religious excitement, impropriety between the sexes, and the fiercest cruelty toward others are oftentimes co-existing and correlating elements. How many sad pages in history are filled with accounts of religious movements, in the conduct of whose frenzied devotees reason and humane dictates were unable to assert themselves, and had to give way before the play of the baser passions.

I trust I am not presenting a pessimistic picture. If I seem to have I must ask the reader to remember that the sufferers in these epidemics make up, generally, a very small percentage of our people. Moreover, there is in humankind a marked tendency to mistake the exceptional for the prevailing state of things; the former attains undue prominence for the very reason that it is uncommon and *outré*. I here indicate unwholesome tendencies. But I have nevertheless shown that the factors considered may work for good as well as for evil. In any event broad observation makes it evident that the universal tendency, in nature and in mankind, whether considered as peoples, or as communities, or as individuals,—is in the direction of health, spiritual, moral, mental and physical, and away from disease. Existence were impossible upon any other basis.

THE COMING RACE.—AN IMPETUS TO THE MOVEMENT OF A MORE INTELLIGENT SUPERVISION OF CHILDREN DURING PRIMARY DENTITION.*

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THE steady advance of our country in the art of surgery and in the science of medicine is the highest tribute to the worth and work of the conscientious members of the medical profession.

The dentist, however, is a specialist pure and simple. He might be called a very modest person and satisfied with very small things if the worth of his labors were measured by the ordinary tape-line. But unfortunately, it happens that that portion of the human anatomy which he has selected for his field of operations has done more mischief in the world than all of the other organs and parts of the human body combined.

It is generally supposed by many parents that the teeth of children are really "unimportant to be watched." Nothing is more erroneous and ignorant; for it is the proper care and attention of the temporary teeth that is responsible for the normal appearance and regularity of the permanent teeth. Again, good and healthy nutrition is a prominent factor in the building up of the child's body, and the proper care of the infant is by all means conducive to the regular dentition and normal growth of the child.

I am not a bacteriologist; and if I were, I should not deem it necessary to impress upon you the fact that the teeth have their enemies in various forms of bacilli and that the poisons given forth by these minute organisims if permitted to colonize in force in various parts of the mouth, will pass into the food and enter the body to its more or less serious hurt. Besides, the very suggestion of neglect of the child, the thought that filth accumulates in the mouth to be dragged inward by the breath, or to be taken in with the food, should be so disgusting in itself as to clamor for correction. The spectator is fairly nauseated at the spectacle of a child holding food in dirty hands to be carried past filthy lips into a filthier tooth chasm. Again, we have the lesson of habit. It has been claimed by a succession of physiologists that a child that has been properly reared for the first ten years of its life, will not depart from the habits and the teachings of this earlier stage, whatever the tempta-

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tions and whatever the change of conditions through which it may consequently pass. If the young child be taught that health is dependent largely upon cleanliness of the mouth and takes this lesson to heart, very much has been accomplished.

In following this subject, I wish to say a word or two in regard to candies—whether they be good for children or not. It is my firm belief that children have a right to like sweet things, and they should have all they want, in reason. But the parents should be positive that they get the candies pure. Clear, clean-cut candy or sugar will never hurt any child. Only this—the child is father of the man, but he should not be capable of judging how much he needs until he is a man. And so it is the duty of every parent to see to it that the young one shall not overtax its little stomach. The very fact that all children crave sweet things is the best evidence that they are good for them. Lower animals without exception, follow their instinct in the selection of food; the one seeking one form of vegetable life, the other, another; yet others crave and find flesh. The very fact of the universal desire of children for sweet meats should put at rest all arguments as to whether they be good for them or not.

Brushing the temporary teeth is just as important as brushing the permanent teeth. Children should be encouraged in the hygienic care of the mouth, and every morning the teeth should be properly and carefully brushed. At the evening meal they should be brushed as in the morning, using an up-and-down motion, and not a motion across as most people do. The up-and-down motion is by far more effective as it removes all the gathered particles of food hidden between the teeth. If possible, the child should be taught to use a piece of floss silk which may be placed between the teeth to remove that debris which has not been dislodged by the brush.

The question of what shall be used with the brush is of first importance to all of us, and particularly to children. The precipitated chalk may be employed with the brush twice daily with entire safety. In the case of children, a medium hard brush should be used, first moistening it and then dipping it into the powder. In a short time the child becomes an adept, so to speak, and through force of habit the teeth and gums are kept clean and fresh.

Proper care of children's mouths is very often a safe-guard against catarrhal conditions. In New York City where the climatic conditions are so variable, there is a constant predisposition to catarrhal afflictions; and if the proper preventive measures are taken in early life, a great deal has already been done to ward off in a great measure any otherwise resulting inflammatory processes of the mucous membrane lining the air passages.

Eruption of Teeth.—The method by which the teeth are forced to appear out of the jaw bone and through the gums, has never been satisfactorily explained to the present day. There are several views on this subject, and each and every one of them is open to serious objection; and it is no part of my purpose to discuss something along the lines of which I have not as yet had the opportunity of researching. However, it shall be my pleasure to leave it to the more skillful men of the profession to delve into the deepest depths of dental and medical literature, so that they might unearth some antiquated theory which has by this time been metamorphosed into a new thought.

Trousseau pointed out that the eruption of teeth is a continuous process; but the present theories and general beliefs and conclusions all point to the fact that the eruption of the teeth is not a continuous process—for the reason that the teeth erupt in pairs or groups and that during the process there are varying periods of rest between the eruption. It takes two years until all the temporary teeth come out. This does not mean that the actual time consumed for the eruption is two years. On the contrary, the actual time consumed for the eruption of the teeth is much less than this. After a group of teeth has erupted, there is a period of rest,—a time of inactivity, until the next group has erupted; and so it can be readily seen that the actual time consumed for the eruption of the temporary teeth must be less than two years.

In a healthy child, when the teeth begin to appear, there is so little general or local disturbance that eruption takes place without even the mother knowing that the baby has started to "teethe." In children of low vitality, the eruption of the teeth plays an important part in disturbing the digestive, respiratory, dermal and nervous systems. The physician's advice is then sought, and the subject becomes one of remarkable interest and importance both to the mother and practitioner.

Growth of Jaw.—When the temporary teeth in front of the mouth appear, there is a corresponding growth of jaw bone. Later, the molar teeth are extruded, and in this location also, the jaw bone grows and deepens. During this time, a considerable change has taken place in the horizontal and vertical portions of the jaw; and there is also a marked change in the angle of this bone. These changes keep up and are progressive until adult life, and the jaw bone then assumes an angle of about forty-five degrees. In old age, however, when loss of the teeth occurs, the bony processes surrounding the teeth are resorbed, and the jaw bone again approaches in character that of childhood. The changes in the upper jaw are similar.

In large cities and in evorcrowded neighborhoods, the dangers surrounding the period of dentition are far greater than in suburban districts; and the dangers are markedly greater particularly among the poorer classes who live in filthy, overcrowded tenements where the sanitary conditions are truly appalling. So important is the careful watching of the child during dentition that a conscientious mother not infrequently deems it advisable to summon the family physician in order to ascertain the real nature and condition of her baby during this period. The child however, can very often be made fairly comfortable during difficult dentition by the administration of certain remedies which I shall mention later. So important again is the physician's care, that if neglect is present, the glandular apparatus of the digestive tract might be affected, and the developmental process taking place in the glandular portion of the alimentary canal may be inhibited or interfered with, the child being made the victim perhaps of some tormenting and intolerable disturbance. It must also be remembered that the nerves of the child at this period are very susceptible to irritation; in fact, so susceptible that in children of certain temperaments, slight irritation of almost any kind may cause a rise in temperature and vomiting. It may also cause diarrhœa,

bronchitis, twitching of the facial muscles, rolling of the eyes, and even convulsions and meningitis. Symptoms in the nature of spasms of the facial muscles will often deceive a mother and lead her to remark "the heavenly smile of the sleeping infant."

Fever accompanying primary dentition is peculiar, and is very irregular. It is often higher in the morning than in the evening. This is just opposite to the regular order; and from day to day it varies a great deal. After a restless night, there is a high morning temperature. After a quiet day there is a low evening temperature. I have seen many cases where parents or nurses have fed little children with hard-boiled eggs, bananas, and apples—after which great wonder is expressed as to why the child's stomach is out of order. Logically and reasonably, why should the little stomach retain this food? After this food has been taken the young one suffers from diarrhœa, cholera infantum, or convulsions, and then dies,—the death often being attributed to "teething." When death is the result in these cases, it is ignorance and carelessness, and nothing else that is responsible.

Second Summer.—The most critical period in the life of an infant is generally considered the "second summer." The reason given is this: that the complications which arise are largely due to the teething of the "eye" teeth and molar teeth. Personally, I do not see why an eye tooth or a molar tooth should cause more irritation than an incisor. In a normal child, as it grows in age and strength, I think there is usually more power of resistance to various kinds of irritation, and the "second summer" therefore, should not be as dangerous even as the first summer as far as eruption of the teeth is concerned. Let me say right here that improper feeding is a great deal more responsible for dangers occurring during the second summer than dental irritation; and we know that children at this age eat anything on which they can place their hands, and unless they are carefully watched and there is a judicious selection of food as to quantity and quality, the inevitable result is a disordered human economy. The following is quoted:

A very large percentage of all the children born, die before they reach the end of the fifth year as the result of the diseases and accidents peculiar to this period of life. Arbuthnot calculated that one in every ten children dies from the effects of the associated and influenced lesions of the age. (Garretson.) The mortality among hand-fed children is much greater than this. Camper is the authority for the statement that out of 5,989 children admitted to foundling hospitals, only 884 were founnd living at the end of the fifth year —that is, a little more than 85 per cent. had died. (Marshall.)

The above statements are undoubtedly startling, and yet are true. When these facts are put before us, it is naturally supposed that they should prove an incentive to the members of the medical profession with a view to concentrating their best efforts along the lines of lowering the children mortality table.

Symptoms and Treatment.—The first indication of approaching dentition is an increased flow of saliva. The reason given for this salivation is the following: that from birth to the fifth month, the salivary glands are quite inactive, but as time goes on, when the teeth begin to erupt, the salivary glands become markedly active; in fact, they become so active as to cause the saliva to flow abundantly and run out of the corners of the little one's mouth, wetting the garments about the neck. Some authors have claimed that the saliva in some cases causes diarrhœa, and that this diarrhœa is brought on by the saline constituents of the saliva, which act as a mild cathartic.

At the sixth or seventh month, there is observed in the parts where the teeth are about to erupt, swellings of the gum. Very often, the gums become glistening, congested, hot and painful. The pain is generally relieved by pressure, and that is the reason why we often see children at that age manifest a desire to bite on hard substances. At this time also, there is often irritability of temper, and restlessness while sleeping, and rolling of the head from side to side. Sometimes a child will be observed having the eyelids half closed. We often see a child at this period pushing its fingers into the external meatus, or pressing its ear into the pillows, or against the bosom of the mother.

The treatment of the various morbid conditions in difficult dentition really belongs to the province of general medicine, and a great many books have been written and published devoting its pages to that portion of medical literature. Day, on "Diseases of Children," stated that to regulate the bowels and to correct the secretions in rickety children, a mild aperient is often required, as bicarbonate of soda, and rhubarb. If the bowels are over-active, a grain of Dover's powder at bed-time is often very serviceable.

Three points should never be forgotten in the treatment of the constitutional symptoms. They are, first, ascertain the cause; secondly, if possible, remove the cause; third, help nature to restore a normal condition. It is this last point which is really of great importance, as not infrequently, where nature is interfered with, the desired result is not accomplished.

The local treatment consists in the use of the gum lancet. If the lancet is used, however, and it does not go deep enough to reach the tooth, the method proves ineffective. The lancet must reach the tooth. There are many physicians who claim that the use of the lancet is never indicated. My own views on this particular question are positively at variance with theirs, inasmuch as many lives have been saved by the ready, free and intelligent use of the gum lancet. It has also been said that blood-letting in pneumonia is never indicated. The fact of the matter is that the danger of the method does not lie in the method, but in the observing power and ability of the person who employs that method. Should the gum lancet be used before the tooth has come out of its bony crypt, it can readily be seen that the incision will be deep, but the result looked for—the advancing of the tooth through the gum—will not be accomplished. The result is that the lips of the incision will again grow together. If this process is frequently repeated, as regrettably, sometimes it is, the cicatricial tissue afterwards formed is likely to be the seat and cause of ulceration. Of course, such unskillful use of the gum-lancet cannot be too strongly denounced.

The assistance of a nurse is very desirable to the proper lancing of the gums. When the gum is lanced in the lower jaw, the child should sit in the operator's lap, the head against his breast. The nurse can control

the hands and feet. The main idea is to hold the head firm, control the tongue, and hold the lip out of the way. The operator can accomplish this by placing the left thumb on the tongue, index finger between the alveolar ridge and lower lip, and the rest of the fingers under the chin. The method proves very satisfactory in that it gives the operator a good view of the lower arch, any part of which can be reached with comparative ease. When operating on the upper jaw, the position of the patient is somewhat different. The child is put on its back in the nurse's lap. The child's legs pass under the nurse's arms. The arms of the child are held to its sides. The operator, however, holds the head of the child between his knees. The left hand is put into the mouth grasping the alveolar ridge with the thumb and index finger. With the right hand the gum-lancet is used, holding it as a pencil. While the incisions are made, the ring finger and little finger should steady the hand by resting these fingers on some convenient part of the jaw.

Sometimes troublesome hemorrhage follows lancing of the gums, but as a rule no special attention is paid to this. When the gums do bleed profusely, it is well to bathe same with strong solution of alum, or they can be touched with alum pencil; or tannic acid in glycerol applied on a piece of gauze may control the bleeding. In the case of obstinate bleeding this may be controlled by a compress applied to the part bleeding. When the compress is applied, the jaws are closed and held in position by a bandage which is passed under the chin and over the head. Some recommend the application of Monsell's solution, or Silver Nitrate, but I never approve of the use of these on account of the subsequent gum sloughing.

A great deal has yet to be discovered along the lines of the proper care of children during the period of primary dentition; and the time is not far distant when physicians and parents will understand the necessity of having the mouth of the child examined at regular intervals in order to insure the proper appearance and regularity of the permanent teeth.

In conclusion I wish to state that there cannot be proper mastication in children where teeth are in a neglected condition. Our public school teachers for instance, have the children in the transition period between first and second dentition. Hence, in the primary and grammar school departments, the mouths of the children are in a greater or less state of degeneration and disorder. Here, however, very much can be done to direct and give intelligent influence to the care of the permanent teeth by an intelligent supervision now and then of the mouths of the young people. But whatever the transition state of the teeth, whether in process of absorption or decay, this one great lesson can be drilled into the youthful mind, and that is this: just as soap and water are necessary to the skin of the individual, so brushing of the teeth and rinsing of the mouth are of paramount importance to a healthful condition. And therefore it follows, that the text of my subject is an all-important one to parents and physicians, as well as to the public school teachers who are the framers and guiders of our present children who some day will control the affairs of the nation, and whom we now look upon as constituting the coming race.

TWENTY-SIX LENOX AVENUE.

THE DANGERS OF MOUTH BREATHING.

BY ALBERT BARDES, M.D.

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IT IS startling to learn that in many of our large cities fully 90 per cent. of the people die from preventable causes and only 4 per cent die from old age. What is more astonishing is the heavy mortality among children, of whom 50 per cent. die before the fifth year of life. In seeking an explanation for the frightful mortality among children I have come to the conclusion that the breathing of impure air is responsible for most of the deaths. Mouth breathing itself is not fatal, but the diseases that it leads to, are.

Mouth breathers can be divided into three classes. Those who breathe through the mouth all the time, those who breathe through the mouth only when they are asleep, and those who breathe through the mouth only when the weather is unfavorable or when they suffer from a cold. A child who is a constant mouth breather shows it in the looks. The face has a vacant stare and even a stupid look, and the cheeks, instead of having the flush of youth are white and pasty. The eyes are dull, the mouth is open and the lower jaw droops. The whole appearance of the child is suggestive of retarded growth and impairment of the faculties. There are decidedly fewer of these children than there used to be, thanks to the vigilance of the public school authorities and to enlightened parents.

The causes of mouth breathing are many, in fact anything that depresses the vitality may produce it, such as teething, taking cold, intestinal disturbances, etc. Mouth breathing is particularly harmful to young nursing infants, because it interferes with their taking nourishment. This is why such babies are puny and emaciated. Finding nursing painful, they take just enough food to satisfy the pangs of hunger. Fortunately, mouth breathing seldom begins before the sixth month, by which time most children are able to nurse even under difficluties.

The consequences of mouth breathing are often serious and lasting. Although the brunt of the trouble is borne by the nose and throat, still, there is no organ in the entire body that may not suffer from its harmful influence. It is when the children are asleep that the evils of mouth breathing are most apparent. The breathing of the little ones is labored and difficult, and either they snore or else they emit a gurgling sound, as if they were choking. Their sleep of course is restless and broken and they often have the night mare. Saliva constantly trickles from their mouths and they are frequently disturbed by fits of coughing. It is often painful to watch them breathe, the muscular exertion attending their efforts to get air causing their little bodies to become covered with perspiration, and they easily take cold. Those of us who have had a severe cold in the head and had to sleep with the mouth open, know the distress that it brings. We get up in the morning, tired and fretful, with an aching head, a dry throat and a bad breath. This is just how the little mouth breathers must feel, night after night. No wonder they look so tired and care-worn.

Let us see how the different organs of the body are affected by mouth breathing. The nose, the most prominent feature of the face, is hindered in growth when

it is not used for breathing. Much of the natural beauty of the face is centered about the nose and mouth, and if the nostrils are closed and the mouth is open, the expression of the face becomes displeasing, even ugly. The upper jaw becomes narrow and misshapen, and the teeth are crowded together and project from the mouth, leading to their rapid decay and to disordered digestion. Ear ache is of frequent occurrence and is often the beginning of a serious and even dangerous ear affection. In fact most ear troubles in infancy can be traced to this cause. The running nose or snuffles is due to the excess of mucus in the nose, which often leads to a catarrhal disorder that lasts for life. It also leads to frequent nose bleeding. The dull voice and the irritable cough of mouth breathers is owing to the action of the cold air upon the sensitive surface of the throat and lungs, which it inflames. For such a condition, cough mixtures are useless. The weak lungs and narrow chest (chicken breast) are the result of shallow and imperfect breathing. The apparent stupidity and backwardness in learning of many mouth breathers is owing to impairment of the mental development. It is a well-known fact that these children contract contagious diseases much more readily than healthy children. The reason is plain. The nose has the power of keeping disease germs out of the body, the mouth has not. In fact mouth breathing favors the entrance of disease germs.

Mouth breathing is unnatural and children do not make use of it unless they are forced to. The health of a child, and its ability to resist disease and to grow as a child should grow is more dependent upon the air and the life giving oxygen it contains than upon the food it eats, providing of course that the air is pure and freely breathed. That air is the most essential element of life is shown by the fact that a person can go a month without food, a week without water, but not more than a few minutes without air.

Air is breathed for a variety of purposes, but especially to feed the blood, to warm the body and to digest the food. Infants breathe about 25 times a minute and adults about 18 times, and with each breath, from 10 to 20 cubic inches of air enter the lungs. In an hour from 50 to 100 gallons are consumed. Nearly all of this vast amount of air is cold and raw and full of germs and other impurities, which make it unfit for the lungs. Nature therefore has provided us with the means of separating the impurities from the air in the same way that chaff is separated from grain. It is in the nose that this purifying process takes place, and for this purpose the nose is nicely adapted. It is wonderful to think that be the air ever so cold or contaminated, when it passes through the nose it is entirely altered. To effect this wonderful and rapid change the nose is provided with an elaborate heating plant, which acts upon the air in various ways. It warms it to blood heat, and at the same time moistens it and relieves it of all impurities. All this is accomplished by the air passing over the extensive radiating surface in the nose.

Inasmuch as the nose is engaged in the most necessary function of life—that of breathing, it is essential that it be clear. If it becomes stopped up, the air must be taken through the mouth. Although the mouth can be used for breathing in an emergency, it was never intended to be used for this purpose for a long time, for it contains no apparatus with which to render the air suitable for the lungs. The mouth has other uses than breathing, and when it is compelled to add this duty to its others, it fails. Nature has assigned certain duties to each part of the body and in the event that a part becomes disabled and another part takes up its work, a two-fold injury occurs. The part that is disabled, deteriorates from disuse and the other part suffers from having a double duty to perform.

The air, in its passage through the nose, besides being acted upon, also exerts a useful influence upon adjacent organs. It cools the brain, ventilates the middle ear, brightens the sight and stimulates the senses of smell and taste. Its wonderful influence on the voice we all know. The moment the nose becomes stopped up, as with a cold in the head, we realize the discomfort it gives. The mind becomes clouded, the head aches, the hearing is dull, the sight is dimmed, the voice is changed and the smell and taste are perverted.

When children breathe through the mouth, it is because the nostrils are closed, usually by adenoids. These vary in size. Some being no larger than an almond, others as large as a walnut. The stoppage they create is in accordance with their size and the size of the nostrils. Small nostrils being of course more completely closed than large ones.

All babies when they are born, have between their nose and throat a small lump known as the third tonsil, which does not interfere with breathing. Its use, like that of the faucial tonsils is not well understood. It gets smaller as the child grows older, and at about the 14th year it disappears entirely. When this gland becomes diseased, as it frequently does in infancy, it is known as adenoid. Then it is troublesome. Adenoids fluctuate in size, swelling like a sponge when the weather is cold or damp or when the child has a cold in the head, and becoming smaller when the weather is warm and dry. In summer they give very little trouble and parents may think they have disappeared, but the first cold day brings a return of the suffering. In young children the growth is soft and bleeds easily, later on becoming hard and firm.

There is a close relationship between adenoids and enlarged tonsils. They usually go together. Large tonsils are not always troublesome. Large adenoids are.

Many parents fail to observe that their children are mouth breathers until they take lessons in singing or in elocution, when it is noticed that they fail to acquire a clear voice in spite of the training. It often happens that people spend considerable time and money in having the voice cultivated and in the end are disappointed with the result. Many of these people are mouth breathers, owing to some impediment in the nose, and they can never expect to have a clear voice until they are able to breathe in a natural manner. No one should think of having the voice cultivated until the nose and the throat have been examined by a competent specialist, who is able to restore the vocal organs to healthy action if need be.

In the cure of disease the first principle is to remove the cause. In mouth breathing children this is usually adenoids. Adenoids can best be removed when the child is under ether, at the same time taking away the tonsils and such other obstruction as may be present. With ether this can be done safely, thoroughly and without the least suffering. This operation, when properly done, is justly regarded as being the most satisfac-

tory one in the category of surgery. Almost at once the child eats and sleeps better and the health and strength improve. Oftentimes the change for the better is such that in a few months it is difficult to recognize the lively youngster as being the same child that was formerly the mouth breather.

Mouth breathing should be attended to as soon as the habit is observed, and before it becomes troublesome. It is unwise to wait until the child becomes stronger, for as long as the nose is obstructed, and there is an inflamed lump in the throat, it is impossible that the child gain strength.

Adults frequently suffer from the effects of mouth breathing as much as children. Many a grown person has a chronic ear, throat or lung trouble that is left over from infancy. Many of these people still suffer from an obstructed nose, and not knowing the true nature of their complaint, seek relief in change of climate, but all to no purpose. The best air in the world is incapable of doing good as long as the nose is defective. There is an old saying that where air does not enter the doctor must. It is certain that the dreaded white plague (consumption) would be less common than it is if everyone were able to breathe through a healthy nose. People would be horrified if they had to eat tainted food, yet how many of them are constantly taking tainted air into the lungs.

237 Lexington Avenue.

UTERINE HEMORRHAGE—ITS SIGNIFICANCE AND TREATMENT.*

BY WILLIAM E. BUTLER, LL.D., M.D., BROOKLYN, N. Y.

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ONE of the conditions frequently met with in practice, one which is of vital concern to the patient—and of almost equal importance to the practitioner—the one as to her health and happiness, the other as to his reputation, is the appearance of an abnormal flow of blood from the uterus. The condition is one which frequently may be easily handled and cured. On the other hand, it may be one which immediately imposes upon the attendant one of the most difficult problems in the realm of medicine.

What is normal would be rather difficult to define as every woman is practically a law unto herself, and the interval between menstruation may vary from twenty-three or four, to as much as thirty-five days. The amount of the flow also varies. If this kind of menstruation occurs regularly with the individual, even though not of the orthodox twenty-eight-day type, it may be called normal. A convenient way of studying the subject will be to consider it as to the time of life of the individual and the character and amount of the flow.

Again, we may divide the causes into intrinsic and extrinsic, the former having to do entirely with those conditions present in the uterus itself, the latter with constitutional causes or those having a mechanical effect in the retardation of the return flow of blood or producing inflamatory changes in the uterus, owing to continuity.

Starting then with the young girl about entering into womanhood, we find that where she is anaemic, chlorotic, or ill-conditioned, that she is as prone to an increased flow at the period, as to the absence of the same. This is the period, too, when the habits of constipation are formed, which tend to increase pelvic blood supply. The hemorrhages occurring in anaemic, chlorotic girls are sometimes of such volume as to cause grave fears for the life of the individual. In fact, one case which I will more fully outline in the study of the treatment was such as to tax all my resources.

Plethora may cause an increased flow, the increased amount of blood in the uterus tending to produce a hyperplasia of the organ, and we have the foundation laid for continued trouble. The growths, appearing in these young girls, are not many and are uually cystic ovaries becoming in some cases, however, very large, producing by their pressure effects a venous stasis.

In the second period of life following the usual marriage, and during the child-bearing period, we find new conditions present which give us by far the greatest number of cases. Of course, the most prominent of these relate to the inflamatory processes following gonorrhoea. There is another condition, tubercular endometritis, which not only occasions an increased menstrual flow, but like the other cases assumes even a dangerous character at times. The organism usually comes from above, through the tubes, then entering the uterus.

The epoch-making investigation of Menge, Wertheim, Winter, Baum, and others, have shown that this microorganism in the presence of a normal condition is the only one capable of finding its way into the body of the uterus. Probably 85 or 90 per cent. of the inflammatory lesions of the pelvis are due to this cause. Where we find inflammatory processes severe, the mucous membrane lining the cervix and body becomes markedly congested with erosions causing slight hemorrhages. The blood mixes with the pus which is thrown off in such large volumes. Where the process has been slight and the condition has remained for some time, we find a granular endometritis developed, which manifests itself in increased flow at the menstrual period from the endometrium itself, and also from the hyperaemic condition of the entire organ.

These inflammations can usually be readily made out by the inspection of the cervix with its eroded and everted lip, which bleeds with the slightest touch and where the process has extended to the body, by the increased size of that body.

Subinvolution after childbirth is a common cause for bleeding; it is usually due to getting up too soon, or a failure to have the uterus in position after confinement.

Another peculiar condition, inherent to the uterus itself, is found where the low grade inflammatory process has continued until the normal structure of the uterus has been largely replaced by fibrous tissue, and we get the so-called sclerotic uterus, the bête noir of the gynaecologist. The process may go on with very few symptoms for a long time until it finally shows itself in increased flow at the menstrual period and then hemorrhage between. In some cases in excessive amounts, in others the flow becoming really dangerous. It seems that the vessels in the uterus undergo somewhat a similar process with the muscular tissue of the corpus, and in this way the walls become attenuated and weakened, bleeding easily.

* Read before the Williamsburgh Medical Society, May 10th, 1909.

Fibroids are fairly common during this period of life and while at times they give no symptoms yet usually where they are submucous or interstitial an increased amount of blood at the menstrual period, and even hemorrhage during the intermenstrual, are common and significant. Under this heading we might conveniently, although perhaps not strictly, classify the polypi springing from the wall of the uterus. The diagnosis is not, as a rule, difficult, the body being enlarged and maintaining a hard round nodule of considerable size, and filling the cavity of the uterus as a single large round tumor.

The amount of blood in these cases may be large and may be fluid or clotted, depending somewhat upon the amount and the position of the growth. The general appearance of the patient is a great help in these cases in distinguishing the condition from the malignant types of intra-uterine disease.

The round, hard fibroid mass, as distinguished from the general enlargement of the uterus in carcinoma, will usually render the differential diagnosis fairly easy. With two fingers in the vagina, one on each side of the body of the uterus and the external hand pressing the organ between these two fingers one gets a very good idea of the size, shape, and consistency of the growth. As the woman advances in life, carcinoma becomes more frequent and the appalling feature of this dread scourge is that it usually comes on insidiously and has gotten an almost impregnable hold on the patient before being brought to the notice of the medical attendant. A woman over forty, who has any irregularity of menstruation, any increased flow or any spotting between the periods, should always be examined. This rule cannot be too strongly impressed upon our patients, and every woman under our care should be told that where any of these irregularities occur it is imperative for her to submit to an examination. Many patients, by following out this plan and submitting to an early operation, may be saved, but where the condition has gone on until there is some thickening of the broad ligament the case becomes almost a helpless one, and I refuse operation.

Carcinoma of the canal of the cervix, which is the most malignant type, is the one which gives notice late in the disease, and this marks it as one of the fatal variety. The cauliflower growth of the cervix, as well as the growth in the fundus, as a rule, shows early, and if promptly attended to may be cured.

The causes extrinsic to the uterus are those of an inflammatory character where the uterus is involved in different processes, and usually can be easily differentiated from ordinary growths by the fact discoverable by bi-manual examination that the uterus is fixed. Where the uterus can be moved from side to side there is positively no inflammation present, as the peritoneum soon becomes inflamed and the two surfaces adhere—immobility resulting. Where the inflammation has extended from the uterus into the tubes, we have as a starting point an already large uterus and, if the processes in the tubes are active, congestion is increased with its attendant metrorrhagia. Where an ectopic exists in the tube we have a different sequence of events; the uterus becomes partly prepared for the ovum and usually a few days later throws off its membranes with the attendant hemorrhage.

One of the important things to be remembered in an ectopic gestation in the history. Where the interval has been prolonged for two or three days to a week or possibly two weeks, a suspicion is always justified, which will be confirmed on examination. Always remember that where the mass is movable and can be pushed from side to side, that there is no inflammatory mass, and that we have either an ectopic in the tube or an ovarian cyst.

A retroversion is usually easily diagnosticated by the absence of the body in front and a large hard mass in the cul de sac, which is movable from side to side. I wish particularly to speak of this movability of the mass in the cul de sac as eliminating any inflammatory processes.

A short time ago I reported a very peculiar case to the Pathological Society, where a patient, 49 years old, gave a history of having had for some months a brownish discharge from the uterus, examination revealed a large mass to the left, apparently closely adherent. A diagnosis of carcinoma or possibly pedunculated fibroid was made. On operation it was found that the mass was firmly united under the sigmoid, and that the uterus was small. On bringing up the mass, it was found that there was a hemataosalpinx with a patulous outlet at the cornu and that the bloody discharge which had come from the uterus had been a leakage through the tube into the uterus. Examination showed this growth to be a sarcoma of the tube.

Where carcinoma has gone beyond the operative stage, what shall we do with it? Many times a marked amelioration of the symptoms can be obtained by the use of the Byrne cautery. This destroys the necrotic tissue and seems to extend downward into the structure of the tumor itself, inhibiting in some way a further growth of the disease. The technique is to burn up into the uterus leaving as little of the uterine tissue as possible. I have personally seen good results from this method.

We may say that in the early stages of womanhood a hemorrhage from the uterus usually signifies some constitutional condition with a general weakening of all the tissues of the body or some condition of the ovaries, usually cystic; during married life the inflammatory conditions, and after childbearing, subinvolution, polypi, fibroid, carcinomata. Of the causes external to the uterus, the inflammatory conditions or growths causing pressure, while sometimes exceedingly difficult to differentiate yet by careful study of the history and painstaking physical examination we can usually arrive, approximately, at the diagnosis. The character of the flow varies somewhat in these different conditions, usually being red and fluid in the constitutional types, red and clotted in fibroid or polypi, dark fluid in ectopic, dark and mixed with shreds of tissue in malignant disease, mixed with pus of either yellow or light in the inflammatory processes. The amount varies being usually most free with the fibroids where the bleeding does not seem to come from the growth itself, but from the endometrium, which has become irritated and hypertrophied. After arriving at the diagnosis, the all important question of treatment comes up, and this, of course, will vary with the disease causing menorrhagia.

Taking first the constitutional dycrasias, we run the entire gamut of the drugs acting on the uterine vessels, besides the appropriate remedies for improving the constitutional condition, plenty of fresh air and good

wholesome food, and finally turn to the operative field for successful treatment.

We usually find a granular endometritis, therefore a curettage is indicated. At times this fails when it becomes necessary to do something more radical. In the one case I mentioned in the early part of the paper I found a cystic condition of the ovaries and removed these, thus cutting off considerable of the blood supply. The result was not perfect, and it became a serious question as to whether hysterectomy would have to be performed. Tight packing, rest in bed with hips elevated would control the bleeding until the next period when we would have another severe depletion.

Those endometritis cases due to tubercular trouble are very difficult to handle, and many times we have long continued menstrual period. In one case recently I removed both on account of the tubercular process, and it was found necessary to inject some pure tincture of iodine into the uterus. Treatment then consisted of high frequency currents, the electrode being used in the rectum; this continued throughout the month seemed to have a marked effect, and the next period was almost normal. In the cases where I have tried this method I have been very much gratified with its success. I am inclined to believe that where the uterus has been the seat of endometritis from tubercular processes, that when the tubes are removed, it would be better practice to remove the uterus with them, leaving the ovaries, if not diseased, intact.

A method used by a number of gynecologists, with which I have not had any experience, is the steaming of the interior of the uterus. This destroys completely the endometritis and practically obliterates the entire uterine cavity.

113 Halsey St.

The Treatment of Morphine and Cocaine Addiction.—Dr. Alexander Lambert (J. A. M. A., Sept. 25, 1909) describes the treatment used successfully by Mr. Charles B. Towns, and made known by him to the Opium Congress at Shanghai. The use of this treatment has given him gratifying results in the Bellevue Hospital, where he has been using it for some time past. Other factors must be considered in treating those addicted to the habit. Sometimes we have to deal with the morally perverted as well as those suffering mental and physical pain. After a few months' use of cocaine, there arises a form of persecutory insanity which convinces those addicted to the drug that every one and all the world is against them, and they refuse to listen to any advice. The specific consists of a mixture of old fifteen per cent. tincture of belladonna, fluid extract of xanthoxylum (prickly ash), and fluid extract of hyoscyamus mixed in the following proportions:

℞ Tinct. Belladonnae .....ʒii
Fluidext. Xanthoxyli .....
Fluidext. Hyoscyami .....a.a ʒi
M.

Before beginning the treatment give four compound cathartic pills and five grains of blue mass. An enema of soap suds is also given to clean out the rectum and sigmoid. When the pills have begun to act begin with the above mixture, giving six to eight minims every hour, until signs of belladonna intoxication are observed. Every six hours increase the specific two minims until fourteen or sixteen minims are being taken every hour, but do not increase the dose above sixteen minims. With the first dose of the specific give from one-half to two-thirds of the usual daily dose of opium, morphine or cocaine which the patient is taking at the time of his treatment. Divide this amount of narcotic in three doses, and give them at half-hour intervals by mouth or by hypodermic injection, as the patient is accustomed to take it. After the first dose of the specific has been given, wait fourteen hours and then give four compound cathartic pills and five grains of blue mass; repeat the cathartic pills or four to six vegetable cathartic pills of the U. S. P. in about six hours. It is necessary that the bowels should act at this time, but if they do not, the cathartic pills must be repeated with five to ten grains of blue mass. If this is not done, the patients are liable to begin to vomit, and the distressing symptoms of the narcotic withdrawal will come in full force. An ox gall enema may be of assistance. When the bowels have acted, one-third to one-half the original dose of the narcotic may be given, in order to make the patient comfortable and contented and ready for the final stage. Twelve hours after the second dose of the narcotic again give four compound cathartic pills, with five grains blue mass, and six hours later give an ounce or more of castor oil, disguised in coffee or orange juice, but not in whiskey. The castor oil produces a characteristic liquid green stool, composed of mucus and bile, and shows that entire treatment may cease. After the patient has been under treatment for thirty hours, a cardiac stimulant should be given every three hours. Strychnine sulphate answers the purpose very well.

Prognosis of Locomotor Ataxia.—In our knowledge of the early symptoms, says Babinski (Journal des Praticiens, June 17, 1909) we have been able to treat tabes dorsalis so effectually as to deprive this ailment of much of its danger.

Cases do so well under mercurialization that we have come to the belief in the syphilitic origin of the disease. Babinski says that the role of syphilis is incontestable, and that tabes is always due to syphilis. American writers are not agreed upon such a positive affirmation. Europeans are willing to admit the existence of syphilis in the history of patients, while not always attributing to it the etiologic importance which its presence might imply—the *post hoc, propter hoc,* reasoning is at times fallacious.

But the assertion of so eminent a man as Babinski that tabes dorsalis offers a good prognosis if recognized early is more important in the fact of his conviction that antisyphilitic treatment is so beneficial.

Babinski applies the X-ray to the dorsum of the neck, and in the thoracic and lumbar vertebral regions, especially when the symptoms localize there.

The principle, enuntiated by Morel-Lavallée, that only certain syphilitic virus is able to attack the nervous system, ought to be considered. But we must admit that reasoning can ask whether this is not a variant of the principle of territory, or simply of "suitable soil."

Any local paralises, as of the sixth cranial, and the weakening of tendon reflexes or their inequality, the pupil of Argyll-Robertson.

In making the diagnosis of syphilis, the case reported by Babinski in this paper offers a curious instance of transmission from one sister to another.

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MARTYRS TO SCIENCE.

PRESIDENT Emeritus Eliot recently addressed the Harvard Summer School of Theology on the "New Religion," in which prevention would be the watchword; of which the skillful surgeon would be a minister. There are critics of this address, among whom one observes that such a religion as this would fail because all great religions, such as have lived and influenced the minds and the conduct of men, have had their martyrs; but "we fear no martyr will ever give his blood as the seed" of this new religion.

We purpose here to discuss, not Dr. Eliot's presentation (the discussion of things religious is hardly within the scope of a medical journal), but rather the criticism here noted. Clearly one must judge by it that martyrs to science, and especially to medical science, have been and are unhistoried to the laity. For example, Mr. T. M. Bridges writes[1] how in September of 1906 Dr. John H. Edwards, President of the British Electro-Therapeutic Society, asked his colleagues, through the medium of the British Medical Journal for some remedy by which he could be relieved of a dreadful X-Ray dermatitis. "I have not in more than two years experienced a moment's freedom from pain, which is at times so severe as to render me incapable of work, whether mental or otherwise." In cold weather our colleague cannot dress himself. The pain "cannot be expressed in words;" drugs have absolutely no influence upon it; on the back of each hand are some fifty warts, many of them confluent; in order for their excision it would be necessary to remove the whole of the skin from the backs of the fingers and from the greater part of the hand. The pain is intensified by holding the hands in a dependent position, and by cold; never entirely ceasing, it occurs in sudden stabs that make him cry out. In 1900 Edwards went to South Africa, where he located many a bullet, thus helping to save life and to curtail suffering. Soon after his return began the affliction which is making his life one continuous torture. He understood perfectly his danger; nevertheless he never for a moment ceased his work or his experiments. Since his pathetic appeal to the profession his left arm has been amputated; yet up to the very day of this operation he was at work in his laboratory; and he now only fears that he may not be able to complete his book on the subject in pursuing which he has made such sacrifices.

In 1897 Clarence Dally, in the Edison laboratory, worked through several weeks, his hands being constantly exposed to the X-Rays and to contact with such highly fluorescent material as calcium tungstate. Presently his eyes became inflamed as though having been scalded with boiling water; and his hair and moustache dropped out. There was at that time, however, no pain—only numbness. But two years later lesions developed in the left wrist; and soon thereupon the other hand became affected. Everything possible was done; one hundred and fifty skin grafts were transferred to his hands from his legs. But all to no purpose. The disease spread; soon the left arm had to be amputated; next the little finger of the right hand and in June, 1903, three other fingers; and eventually the whole of the remaining forearm. Finally, upon these pathetic stumps artificial arms were fastened. Nevertheless the disease progressed, and the sufferings increased until kindly death intervened.

Dr. M. Radiguet of Paris became afflicted in 1903 by reason of his experimentation with the Roentgen rays; and died after two years of suffering, fervently grateful, however, that he had been permitted existence sufficient to establish reliable evidence of the effect of these rays upon the human organism. In like manner did Dr. Blacker of St. Thomas' Hospital, work and strive and die—in 1904. In 1906 Dr. L. Weigel of Rochester succumbed after seven attempts to save his life; first three fingers of his left hand had to be amputated; then his left arm to the elbow, and later to the shoulder.

And among this company of heroes we gratefully number Mr. Wolfram C. Fuchs, of Chicago, who became afflicted in 1905; in the fall of that year the first joint of the right thumb was removed; from that time to his death in 1907 he underwent successively five operations—first for the removal of portions of the fingers of both hands; and later for the removal of the right pectorals. And also Miss Bertha Fleishman of San Francisco, an assistant in the laboratory of Edison, whose death we must record.

What means of torture has mediaevalism devised comparable to those which these sufferers have willing-

[1] Martyrs to Science. Scient. American, July 24, 1909.

ly anticipated and endured. The muscles begin to fail; without premonition the color of the hands and face changes; swelling ensues; bran-like scales appear, then itching papules, pustules, ulcers, cumulative lesions; irritation of the cutaneous nerves becomes progressive until it is permanent and then the pain becomes cruel and constant. Betimes there is inflammation, disintegration, intense itching, successive crops of sores until there is honeycombing of small, indolent, perhaps confluent, ulcers, with sanious, malodorous discharge; then destruction of the skin which has become glossy, of the nails, alopecia, dreadful disfigurements—scars, pits, pigmentations, cicatrices drawing down the angle of the mouth, impaired vision—is it because such things as these are so mussy and unpleasant that the laity know so little of medical heroisms?

And how many surgeons have been called upon to treat their colleagues who have worked in X-Rays and who have fortunately escaped death, at least? None the less are they the stuff of which martyrs are made, for their spirits have been altogether willing. Dr. Brown and Dr. Osgood‡, for example, have reported the cases of eighteen of these workers who had consulted them —none of whom were unscathed, who had all to begin with been in robust health, their ages ranging from twenty-two to forty years. And what has been the motive underlying all this zeal and self sacrifice? Only to seek a way by which mankind can be relieved of such cruel diseases as cancer; nor is the matter any less pathetic that after all such martyrdom, this means has not been found curative of deep-seated lesions.

Space permits us to consider this but one phase of service; but in its many aspects the same devotion, the same altruism, the same contempt of death is manifest. Martyrdom? What would the critic have!

‡Brown, F. I., and Osgood, A. T.: X-Rays and Sterility. Amer. Jour. Surg., April, 1905.

MENDELISM.

IF WE wish to-day to get an adequately comprehensive grasp of the subject of heredity we shall have to understand the work of Mendelism; nor is this an easy matter as any one has been satisfied who has examined the various recent exposition. Nevertheless it is exceedingly important to understand the principles which that great monk evolved. And to this end we are greatly assisted by the work of W. Bateson,* who provides, moreover, valuable hints as to the wide and numerous applications of Mendelism.

The history of this great man's work were almost incredible, did we not bear in mind also the fate of such men as Scmmelweiss and the difficulties with which such men as Oliver Wendell Holmes had to contend in getting the simplest of scientific facts accepted. Johann Mendel was born in Austrian Silesia in 1822. After a good gymnasium training he was admitted to the Augustinian monastery at Brünn, under the name of Gregor Mendel. Later he studied at the University of Vienna, devoting himself to mathematics and physics. Returning to the monastery he began the remarkable series of researches on the impregnation of plants with which his name is now associated, and which covered a period of more than eight years. The results were faithfully reported to a scientific society and published in their journal in 1866. But it attracted no other notice than a biographical note in a treatise on hybrids; and remained thus practically buried for thirty years; nor was it ever realized in his life time that his researches would later prove epoch making.

*Mendel's Principles of Heredity. G. P. Putnam's Sons.

Then in 1900 at least three investigators came simultaneously upon Mendel's buried treasure; in this long-forgotten treatise they found results harmonizing most strikingly with their own. They had assumed themselves to be pioneers; but their new things was in reality that of Mendel, and three decades old. Then, and not until then, was Mendel's name graciously accorded its place in the first rank among original investigators—where no doubt it will now surely remain in perpetuity.

Mendel's work differed from that undertaken by many before and at his time chiefly in the following respects: He selected the parent plants with great definiteness; he carried on his studies on a large scale and over a long period of time; he kept most careful record of the pedigree from start to finish; and he compared his results with the design of seeing whether such precise figures in regard to form, color and so forth might not exhibit definite relations. He was able to detect certain ratios, which the following case from zoology may illustrate:

Rose Bantams are of two kinds, blacks and whites, and pure strains of either kind breed true. Now cross the black with the white. Instead of being of an intermediate color, the offspring are all black like the black parent. For this reason, black is said to be dominant to white, which is spoken of as recessive. When the hybrid blacks are bred together, they produce blacks and whites in the proportion of three of the former to one of the latter. The whites so formed, thenceforward breed true, and produce no blacks, in spite of their black ancestry. The blacks, however, are of two kinds—pure dominants, which give only blacks when mated with a white bird; and impure dominants, which behave like the original hybrids when mated together, giving blacks and whites in the ratio of three to one. Moreover, such birds when crossed with whites may be shown experimentally to produce equal numbers of blacks and whites.

We find in this illustration a type of the innumerable instances studied by Mendel, in the garden at Brünn; repetition after repetition have confirmed his discovery and thrown light upon the most obscure of biological processes.

"MALICIOUS ANIMAL MAGNETISM."

THE great historian and publicist Lecky observed, in that wonderful book, *The Map of Life*, that one generation differs from another less in the amount of credulity it evinces than in the direction such credulity takes; and a little reflection will convince the thoughtful of the weightiness of this observation. Strange beliefs, faith in magic, credence given to marvelous tales of cures of such diseases as cancer, necromantic assumption—these things are not dead to-day. Let any one who imagines them even moribund but glance through the pages of any newspaper, any day in the week; and he will be speedily convinced that such beliefs are maintained in this twentieth century almost if not with quite as much virility as they were in mediaeval times. It is indeed a dreary fact that the springs of human action continue to lie not in reason but in instinct and emotion.

In the May *Forum* Professor Sumner of Yale referred to the possibility that at any time there might appear a revival in the public acknowledgment of a belief in witchcraft; strange this? Not at all—there are believers in witchcraft to-day. A number of cases were recently brought to light by the *Sun* showing how widespread was the faith in occult malign influences controlled by men and women, and the drastic methods that were in use to overcome them and to punish or restrain those who employed them. "A systematic investigation would unquestionably reveal a condition of superstition in the most cultivated and highly educated communities truly amazing in its extent and power."

There is just now a precious pother in Christian Science circles. A new York leader of great reputation (obviously of greater fame than has been thought wise in the Boston headquarters) has been suspended from her functions and has been on trial before her superiors upon the charge that she has been using to the detriment of her enemies a force called "malicious animal magnetism." She is alleged to have been able to cause great distress and injury to her by the exercise of this mysterious power. It does not seem precisely to be implied that this dreadful and malign power is attributed to his satanic majesty in person; nor is it alleged that the accused has been bargaining directly with any devil or other emissary from the hideous depths. Yet who is not irresistibly reminded by such charges as those of the witch agitating a chip in a basin of water to raise a storm at sea and thus destroy a vessel; of a hag sticking pins into a wax image and muttering incantations over it to worry an enemy; of the medicine man curing disease or gradually destroying his victim by boiling his nail-parings or the combings of his hair.

Of course, as the *Sun* observes, "in all times there have been men who refused to accept the boasts of witches and their kind at their face value, though the doubters may have maintained a discreet silence in the face of popular and official indorsement." To-day there may be more of these disbelievers, proportionately, than heretofore (and of course there are, nor are they slow to express their skepticism); but that Professor Sumners' opinion on the possibility of a revival in witchcraft is entirely justifiable seems beyond question.

OLIVER WENDELL HOLMES.

IT is not generally realized by the laity that this great man—whose peculiar knack it was to express the profoundest thoughts in the lightest of veins—belongs in the first instance to the medical profession. Like Weir Mitchell, who began his literary activities at fifty, Holmes made no contributions to literature until his forty-eighth year; and even so, it would seem the riches which he bestowed upon the world in verse and in superb scintillating prose, began to be produced by accident; the work which has made his name a household word for every family of education and of intellectual proclivities appeared first in the *Atlantic Monthly*, and by reason that when the projectors of this new magazine asked James Russell Lowell to become its editor he made his acceptance conditional upon the cooperation of Holmes. And it has even been whispered that the only thing which saved that publication from an early death, in the dire times of the panic of 1857 was the fascination of the Autocrat papers.

As we have claimed, Holmes was first and above all a physician; wherefore it was particularly appropriate that, at a recent special meeting, the New York County Medical Society should have appropriately celebrated his one hundredth birthday—precisely a score of years after Holmes, on his birthday, genially observed: "I am eighty years young to-day." Such celebration was abundantly justified by reason that during thirty-five years he was professor of anatomy in the Harvard Medical School and that for twelve years before taking this chair he had been in medical professorship. There are those among us to-day who will recall how he began his lectures on anatomy with the quaint apology: "Gentlemen, bones are dry."

An exchange truly observes of him that the same freshness of thought, the same combination of boldness and sanity, the same keenness of insight that characterize the talk of the Autocrat and the Professor at the Breakfast Table, distinguished him both as a teacher and as a writer on medical subjects; and his contributions to medical science were indeed valuable and original. It were ungrateful indeed to forget how in this country he fought, simultaneously with Semmelweis in Vienna, the fight in behalf of the septic origin of puerperal fever. "When the medical men claim him as their own they do no more than justice either to his work in the field of medicine or to the influence of his medical studies upon his literary achievement; it is safe to say that in the combination of qualities which gives to the writings of the Autocrat their distinctive attraction, the training and experience of the physician were an essential element."

ORAL HYGIENE.

A RECENT conference of dentists in London concluded that the condition of the teeth of civilized races is imperilling their future; as regards their fellow-countrymen, indeed, the neglect of the teeth was interpreted as a sign of the threatened decadence of the British people; and it was suggested (in accordance with a baneful trend now making in public economics) that it might prove necessary for the State to give dental care to children.

It would seem that we in America are not in so bad a way as they are in England; decadence is not so nearly imminent for us. For when Henry James revisited the United States he found with surprise that we care for our teeth much better than do the English for theirs; that in British drawing rooms and at British tables haggard and toothless gums are frequently in disagreeable prominence.

Yet our own teeth are far from perfect. Dr. Luckie * has found that the conditions demanding treatment in 72 per cent. of school children in New York City (less than ten per cent. of them have ever sat in a dentist's chair), exist in other localities with children of school age. It is not merely the question of supplying the fillings made necessary by neglect; "the filling of a tooth can be made and should be, a rare incident in the oral care."

The nursing infant has the best chance to develop broad maxillary bones and teeth, a good pharynx and large air passages making nasal breathing possible; with consequent health to the respiratory and digestive tracts. Artificial feeding is, by comparison, pernicious. The foods found upon our tables, moreover, are too soft; they should be dry and tough enough to offer suitable resistance and, by encouraging mastication, to further the development of strong facial muscles. In children deprivation of such hardy food lends itself to narrow maxillary and dental arches, high vaults crowding the nerves, irregular arrangement of slender teeth and defective "bite"; we should also, especially in female children, consider departures in facial harmony thus occasioned. Well selected food, properly chewed, tends to keep the mouth clean. The oral cavity (not the teeth alone) should be artificially cleansed at least before retiring and on rising; Dr. Luckie directs specifically how this should be done.

The buccal surface comprises some twenty or thirty inches; it may harbor all kinds of infections which may extend into the nares, the orbit, the frontal and sphenoidal sinuses, and which may enter the system by way of the tonsils and the pharyngeal lymphatics. Moisture and heat combined with the likelihood of food being retained in many interstices, easily explain why this region is ideal for the colonization of bacteria. An unclean mouth has been estimated to harbor 1,140,000,000 cultivable bacteria, many of them of pathogenic character. We recall how, in our student days, a colleague from Texas graciously submitted his oral cavity for biologic investigation. The result was that some twenty-six varieties of bacteria were isolated; nor should we be surprised to learn that the number has since increased to fifty-seven.

During sleep the lips, cheek, tongue and buccal secretions are inactive; there is then little resistance to microbic invasion or propagation. We make no manner of doubt that many cases of diphtheria, pneumonia, influenza, tuberculosis and even septicaemia are thus contracted. In gingivitis there may be pus pockets representing an area of pus-discharging surface that would cause much concern in any other part of the body. In dental caries there is much more to be feared than the destruction of teeth alone. Regarding tuberculosis, indeed, the physician who has worked much among the very poor will relate conditions discouraging in the last degree. Of what use to stuff food into mouths dreadfully filthy, to counsel that this be thoroughly cleaned when there are left scarcely two whole teeth in position to triturate food between them. The problem of the consumptive's teeth is one of the weightiest, as it is certainly as difficult as any, in the whole wide range of phthisiology. The clinician is oftentimes responsible for affections arising out of unhealthy conditions in the oral cavity, which is not enough examined; this part of the alimentary tract is exposed to unaided vision and is capable of digital and instrumental examination through a natural opening.

* Luckie, S.B., D.D.S., Care of the Mouth, Diet. and Hyg. Mag., June, 1909.

The science of dentistry has broadened wonderfully, and chiefly through American initiative; we see this demonstrated in Dr. Luckie's comprehensive paper. Our dentists are no longer merely "tooth doctors," as the Germans have it; we now have here a specialty in medicine, requiring in its practitioners a correct appreciation of pathology, physiology, bacteriology. Many somatic problems elsewhere presented in the body are best and easiest studied in the mouth. And an oral affection may be but an indication of a systemic, or metabolic disturbance. The physician should realize the large part the mouth plays in the economy; and should know when the dentist can help him, especially in disease prevention.

DEATHS IN MINES.

DEPLORABLY fatal mine explosions have in recent years been occurring with disconcerting frequency. The *Scientific American* well urges that the causes of accidents in mines be investigated by legislative commission so that, if possible, more successful efforts may be forthcoming toward safeguarding the lives of employees.

Dr. J. A. Holmes, chief of the technologic branch of the Geological Survey, stated some time ago that among every one thousand coal miners in the United States a proportion of three and a half are killed every year. In Belgium, on the other hand, where the miners work under much more dangerous conditions, the death rate is only one to every 1,000 employed. Since 1890, American mines have killed 22,840 men and injured 50,000; and the death rate has been on the increase from 1901 to 1906. Dr. Holmes enumerates factors of uncertainty in mining: The character of the explosives used in certain mines; the quantity of explosive which may safely be used in the presence of dust and gas; the quality of the gas and its dangerous percentages; the nature, extent and insulation of electric currents used; the kind and condition of the miners' lamps; probable underground fissures, determinable by the study of strata, from which gas may burst out.

In Belgium much disaster has been avoided by the mutual agreement between operators and miners to eliminate men known to be careless and foolhardy from positions of danger. In consequence probably of this course there has been no explosion during the last seventeen years in the most dangerous of the Belgian mines. James Taylor, an Illinois mining inspector, advocates the abolition of the present system of blasting coal as the most effective prevention of mine explosions. It is useless to advocate at this time the return to the lump coal system of mining; nevertheless, Taylor believes this to be the surest cure for the reckless use of powder and the lack of proper preparation of shots.

Dr. Holmes mentions the character of the coal dust as a factor, not in accidents, but in pulmonary diseases among miners; and he dwells upon the extent to which it may be kept "safe" by spraying. As a matter of fact, where there is wet mining the tuberculosis death rate among the employees is amazingly low—6.4 per cent. in the tables of Mr. Frederick Hoffman, the actuary of the Prudential Life Insurance Company. Several explanations of this low mortality have been forthcoming: That coal miners are to begin with picked men, so that all of poor physique are precluded from this work; that there must be some antiseptic property in coal dust; that in wet mining the point of saturation is so nearly reached that the dessication and dissemination of sputum through the atmosphure is impossible (Cornet). In "dry" mining, however, the consumption mortality is very high, as it is in all dust producing occupations. A death rate of 70 per 1,000 is cited by Oliver, among white rock drill miners in the South African gold fields, as against 6.3 per 1,000 among English wet coal miners, this enormous mortality difference surely results in the mine from the dust dissemination in the former. It has therefore been sought to convert dry mining into wet mining by means of jets and sprays; and Leyner has contrived a water drill, whilst Britten has invented an apparatus which, while laying the dust, disposes also of the vitrous fumes generated in the blasting.

A Horse is considered to be about eight times as powerful as a man; also that an athlete in a short sprint or in a football game develops for a short period energy at the rate of the so-called horse power. When thus exerting himself to the utmost a man breathes rapidly and deeply, requiring large volumes of oxygen. On the other hand, while resting quietly or while asleep the respiration is such that comparatively little oxygen is needed. Midway between these extremes is the moderately active person moving about in the performance of ordinary duties. These conditions have their effects on ventilation; for the extent to which the air is vitiated is directly proportional to the carbonic acid gas exhaled, which in turn is proportional to the air breathed. To determine the vitiation of air due to the presence of a man in a room with a gas-jet burning, experiments were recently made, the results showing that the percentage of carbonic-acid enhaled varied with the activity of the man, the gas jet requiring a constant quantity of oxygen. During the first three hours the man moved about moderately, rested and finally fell asleep. For the approximately two hours he was asleep the vitiation was greatly reduced; but increased again when he awakened and moved about. The observations made during the tests proved also that an active man uses up the oxygen in air at about the same rate as does a gas jet burning five cubic feet of gas per hour—the capacity of the ordinary burner.

BIBLIOGRAPHICAL

A Text-Book of Obstetrics. By Barton Cooke Hirst, M.D., Professor of Obstetrics in the University of Pennsylvania, Gynecologist to the Howard, the Orthopaedic, and the Philadelphia Hospitals, etc. Sixth Edition, revised and enlarged with 847 illustrations, 43 of them in colors. Octova pp. 992. $5.00. Philadelphia & London: W. B. Saunders Company. 1909.

The sixth edition of this great and popular text-book, has reached us thoroughly revised to date. The most extensive additions have been made in the section on operations of which many works of this class are strangely deficient.

The author of this work gives a brief account of the diagnosis and treatment of all the pathologic phenomena peculiar to women, which would seem to be the proper scope of such a work. It would seem as if the specialist in this branch of medicine must be an expert in every department of gynecology, especially as the bulk of this work appears to be falling into his hands.

The general practitioner for many reasons must be prepared at least to make diagnoses and to give proper advice on all the complications and consequences of child-bearing, and on the relations between the diseases of women and that process, and there is no better place to obtain the information than in the work under review.

The work is eminently practical, based upon an immense experience, and is just what is required as a text-book.

The text is fully and beautfully illustrated.

Medical Gynecology. By Samuel Wyllis Bandler, M.D., Fellow of the American Association of Obstetricians and Gynecologists; Adjunct Professor of Diseases of Women, New York Post Graduate Medical School and Hospital, etc. Second revised edition with original illustrations. Octavo, pp. 698. $5.00. Philadelphia & London: W. B. Saunders Company. 1909.

This book dealing with the non-operative side of gynecology, met with a kind reception, hence a revised edition is before us. It would seem as if there were a large field for such a work in those numerous conditions where operative procedures have been viewed as a last resort, but where medical means might accomplish so much, if they were only known.

The various topics have been viewed from the standpoints of the symptoms, the disease, the bimanual and microscopic findings, and the general physical and nervous state.

The knowledge gained by studying the diseases of women from these different points of view, gives a more distinct mental picture and furnishes logical coordinate conclusions.

The life and make-up of woman are such that, aside from the diseases and injuries to which she is liable, physiologic processes, heredity, predisposition, mental perturbation, the emotions, marital relations, etc., have an important bearing, and, therefore, the physician who enters into a study of these factors becomes a far better judge of the meaning of symptoms.

The book is highly commended.

The Principles of Hygiene. A practical manual for Students, Physicians, and Health Officers. By D. H. Bergey, A.M., M.D. Assistant Professor of Bacteriology, University of Pennsylvania. Illustrated. Third Edition, thoroughly revised and enlarged. Octavo, pp. 555. $3.00. Philadelphia and London: W. B. Saunders Company. 1909.

In the last four years, there have been many advances in this department of medicine, as well as in all others, so that a revision of the text of this valuable book was urgently required.

The subject of sewage purification has been greatly extended, the discoveries along these lines will be found of much interest to health officers.

Important discoveries have also been made in the domain of etiology, the most important of which are the discovery of spirochaeta pallida as the cause of syphilis, and the demonstration of the direct relation of the rat flea to the dissemination of plague.

In the field of immunity, progress has been made in our knowledge of the defensive operations of the body and the best means of fostering and aiding these all-important agencies, as in the use of injections of dead cultures of bacteria in the prevention and cure of disease, and in the control of these injections by scientific means.

The treatment of cerebro spinal meningitis by means of immune serum promises much for the future.

This work is a standard manual for its purpose and can be depended upon.

International Clinics. A quarterly of illustrated clinical lectures and especially prepared original articles on Medicine and Surgery. Edited by W. T. Longcope, M.D., Philadelphia. Volume III, Nineteenth series, 1909. Philadelphia & London: J. B. Lippincott Company. 1909.

The following are some of the subjects treated: Treatment of tuberculosis; the present position of antitetanic serotherapy; clinical observations in five hundred cases of typhoid fever; Graves' disease; Raynaud's disease, etc.; Gonococcic Septicaemia; women in medicine; exophthalmic goitre from the standpoint of the clinical surgeon; on cases of unforeseen death in scarlet fever; the intra cranial complications of acute and chronic suppurative otitis media; chronic constitutional headaches and numerous other matters of great interest.

The book is worthy a place in every well-regulated medical library. It helps the reader to keep up-to-date.

Text-Book of Anatomy and Physiology for Nurses. Compiled by Diana Clifford Kimber, Graduate of Bellevue Training School; Formerly Assistant Superintendent New York City Training School for Nurses, Blackwell's Island, New York, etc. Third edition revised by Carolyn E. Gray, R. N. Assistant Superintendent, New York City Training School for Nurses. Octavo, pp. 438. $2.50. New York. The Macmillan Company. 1909.

In the present edition of this excellent text-book, the nomenclature has been largely changed and the entire text revised, and the illustrations improved and increased. A chapter on "Special Membranes and Glands" has also been added. The chapter on the nervous system has been entirely rewritten. A valuable summary has been added to each chapter, and the glossary and index much enlarged.

The book will be found thoroughly up-to-date, and to be depended upon.

The Practice of Medicine.—A text-book for practitioners and students with special reference to diagnosis and treatment. By James Tyson, M.D., Professor of Medicine in the University of Pennsylvania and physician to the Hospital of the University. Physician to the Pennsylvania Hospital, etc. Fifth Edition revised and enlarged, with 5 plates and 245 other illustrations. Octova, pp. 1438. $5.50. Philadelphia: P. Blakiston's Son & Co. 1909.

The usual effort has been made to place the present edition abreast the requirements of a new edition.

As to actual additions, the infectious diseases have been revised, diseases of the blood have been worked over, and the treatment of tuberculosis has been modernized; *that* with tuberculin has been elaborated by the assistance of Dr. Trudeau and Dr. Baldwin, of Saranac. The opsonic index has received as much attention as it seemed to deserve. The importance of blood cultures has been emphasized.

The subject of diseases of the stomach has been enlarged and a section on testing for occult blood by the late lamented Dr. J. Dutton Steele, added. Cammidge's pancreatic reaction has been inserted. Additions to diseases of the circulatory system are many and include an elaboration of the Adams-Stokes syndrome, and enlargement of the space devoted to pericarditis.

Tetany and exophthalmic goiter have been largely rewritten, and the author has had the advice of Drs. John Rogers and Silas P. Beebe on these affections. Dr. Rogers has himself written the paragraphs on the treatment of Graves' disease by the anti-serum.

In nervous diseases, Marie's new views as to aphasia have been inserted and amaurotic family idiocy and congenital hyptonia have been considered. A short sketch of herpes zoster is included. Wassermann's reaction is inserted under syphilis of the nervous system because received too late for insertion under syphilis.

A number of illustrations have been added, including a very handsome plate showing the marrow of bone in different forms of anemia.

The well-known standing of the author in the profession is sufficient guarantee of the quality of his work. The book stands in the front rank and is published at a most reasonable price.

An Introduction to Chemical Analysis for Students of Medicine, Pharmacy, and Dentistry. By Elbert W. Rockwood, M.D., Ph.D., Professor of Chemistry and Toxicology, University of Iowa. Third revised Edition with 20 illustrations. Octavo, pp. 247. $1.50. Philadelphia: P. Blakiston's Son & Co. 1910.

In the present revision of this useful book, the author has given greater prominence to the ionic explanations of analytical reactions in the interest of everyday work.

The text is clearly expressed in as simple language as possible, eminently practical, and the book is just what every student needs in his work.

The Secret of Sex. By E. Rumley Dawson, L.R.C.P. (London). M.R.C.S. (Eng.) Fellow of the Royal Society of Medicine, etc. 12 mo. pp. 64. New York: Cochrane Publishing Company.

The author of this little book claims to have discovered Nature's secret, the causation of sex in mankind.

The theory is built up essentially on clinical material and facts—each individual case must be separately worked out, preferably by the private medical attendant.

The subject is said to have aroused considerable interest in England.

It is claimed that by this law, it is possible for parents to determine at will, the sex of the child that is to be born.

Causes of Disability. By Charles H. Harbaugh, M. D., Medical Director of the American Assurance Company, and Ex-president of the American Association of Medical Examiners. Octavo, 650 pp. Containing 123 half-tone illustrations in the text and 15 full-page plates, 11 in colors. Cloth, $6, prepaid. Philadelphia, The Overbrook Publishing Company. 1909.

This is the first and only book upon the subject of which it treats, and it must be of great value to every one interested in insurance work, as the information it contains cannot be found in any other publication.

We would specially mention the chapters dealing with the advantages of accident insurance work, the qualifications requisite, the adjusting of claims, the securing of appointments, and the commanding of examinations in competition with other physicians. These embody points most valuable not only to the accident examiner, but also to any physician who wishes to enter the accident field. The entire range of accidents is covered, taking up every part of the body in a systematic and thorough way, and telling exactly the amount of disability and how to adjust the claim.

Recurrent Hordeolum.—A. Brav (N. Y. Med. Jour. September 18, 1909) says that the ordinary hordeolum requires, if accompanied by severe pain, a small incision followed by hot fomentations. A solution of boric acid and biborate of soda in distilled water will then effect a cure. In multiple and recurrent cases the hot fomentations are followed by a mixture of arnica, laudanum, and dilute Goulard's extract in water, applied on absorbent cotton. After the disappearance of the sty he uses a weak ointment of bichloride (gr. 1-8) to 2 drams of white vaseline. This should not merely be smeared over the lids, but should be applied with gentle massage every night. Prior to the application of this antiseptic ointment hot compresses should be applied to stimulate the circulation of the margin of the lids. While an ordinary sty does not always require the correction of any errors of refraction it is always an essential procedure in the recurrent type. It is very often a contributory factor in the development of stys. Having corrected any error of refraction under a mydriatic an antiseptic nasal wash is ordered. A teaspoonful of boric acid in a glass of water to be snuffed up twice daily is a good, simple procedure. The constitutional aspect of the case must, of course, be remembered. Compound syrup of hypophosphites has given good results. The fluid extract of cascara may be added to keep the bowels in good condition. Under the foregoing plan the most intractable cases will usually yield in a month's time.

RETROSPECTIVE

Neuritis, observes M. A. Starr (Lectures on Nervous Diseases) may occur in a single nerve or in a plexus. The causes are: injuries, strains, pressure, compression in fractures, rheumatism, gout, cold. The pathology of parenchymatous neuritis:—There is congestion and exudation in nerve trunk; swelling and degeneration of individual fibres; (1) the axis cylinder is broken and disintegrated in a fatty mass; (2) the medulary substance is separated into segments and fatty globules, and mingled with granules and nucleated cells; (3) the connective tissue sheath is shrunken and empty. The neuclei multiply. The products of degeneration liquefy and are absorbed. Regeneration occurs by growth of new fibres outward from the healthy stump into the old sheath. Of interstitial neuritis: The connective tissue of the endoneurium and perineurium increases in volume and the nerve-fibres are compressed by congested vessels and by the new tissue. These forms usually occur together in non-traumatic cases. The symptoms of neuritis:—There is weakness or paralysis with atrophy and reaction of degeneration in muscles supplied by nerves involved. The reaction of degeneration (R. D.) is a change in the action of the nerves and muscles to the electric currents; the response of the nerve to both currents is lost; the muscle loses its faradic action; the galvanic current is changed, the muscle responding more actively to the closure of the anode (positive pole) than to that of the kathode (negative). There is pain, numbness or anesthesia in the skin supplied by the nerve involved. There are vasomotor and trophic changes in the distribution of nerves involved. There is coldness from sluggish metabolism; glossy skin; oedema; pain and tenderness at the seat of inflammation in interstitial cases, and along the nerve trunk. The course of neuritis is slow; there is spontaneous recovery when the continuity of the nerve is preserved; otherwise there is no recovery. The treatment: Unite the divided ends if the nerve is broken. Rest the part injured; but exercise the paralyzed muscles by electricity and massage; hot applications; sedative lotions; morphine for pain; protect from cold by cotton batting.

Multiple neuritis is an inflammatory or degenerative disease of the peripheral nervous system varying in extent and density and affecting symmetrical parts of the body. The motor nerves may be involved alone (as in lead and mercury poisoning); or the sensory nerves alone (as in coal-gas poisoning); or both may be involved together (as in alcoholic neuritis). The distal parts of the nerves are commonly affected more than the central parts; hence the symptoms appear chiefly in the extremities. The pathological process is as in simple neuritis; and may be parenchymatous alone; or interstitial alone; or both. Etiology. Toxic cases: alcohol, lead, arsenic, carbon, bisulphide, copper, mercury, phosphorus, coal-gas, coal-tar, drugs. Infectious cases: diphtheria, typhoid, typhus, scarlet fever, measles, malaria, leprosy, small-pox, erysipelas, gonorrhoea, grippe, beri-beri. Rheumatic cases: exposure to cold, over-exertion. Cases secondary to anemia, gout, tuberculosis, syphilis, septicaemia, general malnutrition and diabetes. The symptoms: There is acute or subacute onset with fever (103 to 104 degrees) with general febrile manifestations—sometimes without temperature. Sensory symptoms are the first to occur: pain—sharp, severe; located in limbs and increased by motion and pressure; muscular and nerve tenderness, sensitiveness; paraesthesiae—burning, tingling, numbness, band about legs and body; anaesthesiae—in tips of fingers and toes, extending up limbs; ataxia—in fine movements and in loss of sense of position. The motor symptoms are: paralysis in extensors, dropped wrist and foot, general inability to walk or move in bed; contractures; cranial nerves may be paralyzed, causing manifestations in face and eyes; atrophy, rapid in onset, R. D., or diminution in electric contractility, loss of deep reflexes, no paralysis of sphincters. Trophic symptoms are: vasomotor paralysis; glossy skin; oedema; abnormal growth of nails and hair; sweating profuse; no bedsores; urticaria.

Certain cases of multiple neuritis present in their course peculiar features: 1. Alcoholic neuritis: (a) Paralytic type; rapid onset is the rule, with delirium and delusions, subsequently imperfect memory of recent events; severe paralysis in extremities with very great pain; anesthesia very marked in hands and feet, also tremor and tenderness; dropped wrists and feet. (b) Ataxic type: sharp pains are soon followed by great ataxia in legs and hands, by anesthesia and partial paralysis; but there is no loss of control of bladder or rectum. In both the paralytic and ataxic types of alcoholic neuritis there is danger of heart failure, or death from exhaustion due to complicating gastritis; usually there is rapid increase of symptoms for three or four weeks; then, after a stationary period of two months, a slow recovery enduring from six to twelve months. 2. Lead neuritis: the onset is with intestinal colic and lead line on gums; paralysis causing dropped wrists, without sensory disturbances in hands; next the deltoids are paralyzed; all the muscles of the arms and legs may then be affected; and then (though rarely) sensory symptoms with delusions; there is gradual recovery (in four months) when the poison is eliminated. (3). The arsenical cases: gastric disturbance at outset; then paralysis with ataxia, tremor, atrophy, great numbness (but little pain); the legs and arms are equally affected; the skin is darkened; recovery is in from two to six months, depending on the original severity; contractures are likely. (4). The coal-gas cases: subacute and slight; chiefly sensory; numbness for a long time in fingers, hands and feet. (5). The diphtheritic cases: there is severe paralysis of all extremities, usually without sensory disturbance; the cranial nerves are frequently affected; the paralysis begins in the uvula; swallowing and talking becomes difficult; eyes are often turned; ataxia is marked in some cases; there is never pain; recovery is usual in three months. (6). Epidemic form (Beri-beri): occurs in Brazil, India, Borneo, Japan, Philippines; there are several types—acute pernicious, chronic oedematous, chronic atrophic; rare in our latitudes.

The diagnosis of multiple neuritis: From anterior poliomyelitis; by pain, tenderness along nerves, sensory symptoms, the symmetrical distribution of paralysis. From locomotor ataxia: by rapid onset and paralysis, preservation of control of bladder; absence of Argyle-Robinson pupil. From myelitis: by absence of affection of bladder and rectum, by absence of bedsores, lack of tenderness of spine to heat and by distribution of symptoms in periphery. The prognosis is good in a large majority of cases, the recovery being slow; bad

when heart becomes rapid and respiration poor.

The treatment of multiple neuritis: Rest in bed; warm applications to limbs by packs; rubbing with oil; gentle massage if possible. Prevent deformities and contractures by proper position of limbs. Electricity—galvanism through nerves and to muscles after acute stage. Warm baths (98 degrees) for half an hour several times daily. Attention to diet: nourish well, fatty food; cut off alcohol in all cases. General and nerve tonics—iron, quinine, strychnine, glycerophosphate of lime and soda. In acute stage, sodium salicylate (gr. x9—3 hr.); and such sedatives as phenacetin and morphine. In chronic stage, arsenic (gr. 1-50 t.i.d.) and cod liver oil.

Thymus Death.—Dr. J. P. Crozer Griffith (N. Y. Med. Jour., Sept. 4, '09) relates the histories of seven cases of sudden death in the same family between the ages of one month and eight months. The clinical histories were nearly identical; namely, slight bronchitis followed in one instance by extremely sudden death; in the remainder by the rapid development of cyanosis and dyspnea lasting some hours or a day, but without any symptoms suggesting stenosis. The autopsy findings in the ninth case showed a very large thymus, and as there was hypostatic congestion in the lower lobes only, the condition was proved not to be due to pulmonary involvement.

The several theories advanced for the cause of sudden death may be classified as follows:

(a) Non-mechanical or convulsive. 1. A hyperthymization of the blood, the result of overproduction of the thymic secretion, a toxic condition resulting. 2. Defective secretion of the thymus with consequent constitutional disturbances. 3. A toxic action of some other nature not definitely known. 4. A neurosis of some sort through which the nervous system is rendered extremely sensitive, and cardiac inhibition follows from slight and often undiscoverable causes, and which has thymic enlargement and the other lesions of the status lymphaticus as its anatomical manifestations. 5. A neurosis of this nature, independent of any so-called status lymphaticus.

(b) Mechanical. 6. Pressure upon the trachea, producing reflex inhibition of the heart's action through irritation of tracheal nerve filaments. 7. Pressure upon cardiac nerve trunks of the great vessels. 8. Direct compression of the trachea with consequent strangulation. Of these theories only two have received acceptance at all universally. First, that there is a neurosis of some sort, toxic or otherwise, and that death is a cardiac death. Second, that there is compression of the trachea, and that death is due to strangulation.

A Simple Method for the Treatment of Suppurating Bubo.—Dr. J. A. Murtagh (N. Y. Med. Jour., Sept. 4, '09) sums up as follows.

1. Thorough application of the actual cautery to the chancroidal ulcer, which is the usual seat of the trouble.

2. Incision into healthy skin usually in an area one to one and one-half inches covering the bubo.

3. Thorough removal of the diseased glandular tissue and complete irrigation of the cavity with bichloride of mercury solution. Haemorrhagic oozing many be stopped with injections of hydrogen peroxide followed by sterile water.

4. Thorough drying of the cavity as nearly as possible by pressure, before introducing the iodoform emulsion, and rest in bed for a few days after the operation.

The advantages of this method of treatment are as follows:

1. Immediate relief from pain and discomfort.

2. Rapid healing of the skin incision and the diseased glandular tissue.

3. Absence of a painful and disfiguring scar.

4. Avoidance of the long tedious period of recovery usually experienced by other methods.

Diagnosis of Tuberculosis of the Tongue.—Going over the historical and practical side of this question in a complete but summary paper. Riccardo dalla Vedova (Il Policlinico, an. xiv., surg. sect., fasc 3) reminds us that Fischer finds but 6 cases of lingual involvement among 1,500 cases of pulmonary tuberculosis, and that Willigk records only two among 1,317 necropsies for this morbid process.

Dalla Vedova, on the contrary, suggests reason for believing that the frequency of lingual tuberculous conditions is greater than statistics indicate. He gives seriatim the reports of men of good standing. O. Weber (1866), Enteneuer (1872), Nedopil (1876), Körte (1876), down to Silbermarls, 1902, and Provera and Anzillotti (1906), these showing that some so-called carcinomatous growths removed from the lingual substance, were followed by death due to pulmonary or to miliary tuberculosis, and also that some cases were incautiously diagnosed, only to find upon microscopic examination that the original neoplasm was tuberculous. In such instances the amount of pain is less than in lingual carcinoma. Movements are less interfered with. And this in spite of the observations of Wittrock showing that cancer of the tongue may be overlooked and those of Körte showing the occurrence of intense neuralgic pains in lingual tuberculosis which arise even during rest of the organ and increased by voluntary movements. The importance of exploratory incision with removal of a section for bacteriologic and histologic examination is paramount.

Two new cases are detailed, in each of which the clinical diagnosis of cancer was changed to tuberculosis. One came to Prof. Durante's service at the Royal University of Rome giving absolutely no tuberculous signs. The absence of any signs whatever of syphilis, the rapid development of the neoplasm, its consistency, the early ulceration, the margins not undermined, the lack of any miliary tubercles in the base of the ulcer or in the nearby mucosa, led to the diagnosis of ulcerated epithelioma, but this proved wrong. In the second case, syphilitic glossitis being excluded by the therapeutic as well as other tests, tuberculous inflammation was considered in disregard of the absence of the granules of Trelat, and of caseous or other nodules. Yet in both cases histologic reports conformed to a tuberculous diagnosis, the latter case being of a tuberculo-fibrous glossodermatitis, and the former a case of circumscribed ulcerative tuberculosis.

The paper goes on to minute consideration of secondary developments and metastasis, of the arms (Bucquay), of the epididymus (O. Weber) and of the lymphatic glands (P. Reclus).

Primary lingual tuberculosis occurs rarely. Orlow gives 12 instances among 65 lingual cases. Schlieferowitsch 2 among 7 observed at the clinic at Heidelberg, Hopstein one case among 12 at St. John's at Borm.

According to Rolland the intralingual varieties of tuberculosis may be confounded with leutic conditions. Ricord differentiates by the multiple nature of gumma. Boyer believes that syphilis chooses the base of the tongue and tuberculosis the tip. Bonnet includes a study of actinomycosis of the tongue. Both conditions now are benefited by iodine treatment and the search for ray fungus must be undertaken. The pain of epithelioma radiates to the ears. Lipoma of the tongue is very rare, and provokes no ulcerative changes. In fibroma, especially if a fibrosarcoma anti-syphilis and iodin treatments are needed to assist in the differential. Exploratory puncture in cystic formations, see Billroth, Bryant, and Hofmolk (the latter writing in 1877), offers aid.

The work of Hoppe showing that normal individuals may present in their saliva tubercle bacilli must be recalled, and equally the fact that they may be wanting in the exudate from a tuberculous ulcer according to Butlin, Hausemann and Schliferowitsch.

Dalla Vedova credits Schuh (1854) with the earliest resort to section examination, and praising him for its employment in doubtful cases, advises a general use of the procedure to bring about the earliest diagnosis.

Seventy-two authors are quoted in the bibliography.

The Enzyme Treatment for Cancer.—Dr. Wm. Seaman Bainbridge (Med. Record, July 17, '09) in a final report discusses this method of treatment, and from careful clinical and laboratory observations draws the following deductions:

(1) That the internal medication with Holadin and oxgall aids digestion and increases elimination.

(2) That lotio pancreatis applied locally clears the ulcerating surface by removing organisms, thus aiding in diminishing the absorption of their products.

(3) That aiding digestion, increasing elimination (by skin, kidneys, and bowels), and decreasing local absorption are the most important features of the treatment.

(4) That the regime by increasing resistance may in some cases decrease the rapidity of the malignant process.

(5) That control cases given injections of glycerin and water or sterile water alone, plus the regime, did as well as those on the full euzyme treatment.

(6) That injectio trypsini, in some cases, seems to cause more rapid disintegration of (to "liquify," according to Beard) cancerous tissue.

(7) That while it may accelerate the breaking down in the center of the tumor mass, the periphery is found to be actively growing. When injected into the tumor itself this disintegration is more marked.

(8) That because of the tendency of injectio trypsini to disintegrate the tissues, it may be a direct menace to life (a) by eroding large blood vessels (when the disease is contiguous to these structures, as when deep in the neck or in the pelvis) thus causing death from haemorrhage; (b) when given in large doses, over considerable periods of time, by overwhelming the system with toxic products (tumor toxins), they, in some cases, hastening death.

(9) That the injections are often painful, and patients many times refuse to take them.

(10) That the so-called "trypsin abscess" proved, upon examination of the material, to be unabsorbed injectio trypsini plus broken-down tissue.

(11) That when real abscesses formed they were due to faulty technique, to localization of a general sepsis resulting from the absorption of toxic products, to an accompanying sepsis of whatever origin, or to a complicating acute infection.

(12) That injectio amylopsini seems, to diminish cachexia in some cases, in accordance with the claims of Beard and others.

(13) That in some cases there was no reason to believe that injecto amylopsini excited the action claimed for it.

(14) That when amylopsini was injected directly into the indurated area left after injecting trypsin, absorption of the trypsin solution was not hastened.

(15) That 100 mimims daily of the "Quadruple X" solution, the strongest made, were given in some cases with no untoward effect.

(16) That improvement in hemoglobin (5 to 12 per cent.) during the first few weeks or trypsin treatment occurs in about one-sixth of the cases examined. In only one-third of these was the increase ascribable to the trypsin alone.

(17) That a gradual and moderate increase in the number of polymorphonuclear neutrophile cells was noted during the first two weeks of the trypsin treatment in a few of the cases.

(18) That with the exception of two cases such leucocytosis as was noted was attributable to the occurrence of complications during the first two weeks of trypsin treatment.

(19) That in fifteen out of the twenty-two cases above mentioned a steady increase (6 to 12 per cent.) in the number of eosinophile cells was noted while patients were on the trypsin injections. There was no eosinophilia in the control cases, nor in the cases treated by trypsin given by the mouth.

(20) That eosinophilia occurred regularly in cases of carcinoma involving the bones or the intestines, even without the exhibition of trypsin.

(21) That the claims for eosinophilia as a test have not been substantiated in our experience.

(22) That albumin and casts were found in the urine before treatment was begun in two cases. In neither of these was the amount of albumin or the number of casts increased at any time throughout the continuation of the trypsin injections.

(23) That in severe cases in the very last stages of the disease, hyaline, granular, few pus casts, and occasionally albumin, made their appearance.

(24) That in two other cases in which it was impossible to obtain specimens of urine before beginning the treatment, albumin and casts were present when the cases came under examination; and as the trypsin doses were increased the amount of albumin and the number of casts were increased.

(25) That dextrose was at no time found in any of the urine specimens examined, not even when untoward manifestations of trypsin were present and large doses of amylopsin were being given.

(26) That the series of experiments which were conducted for the purpose of ascertaining the presence or absence of an enzyme in the urine with properties of digestion similar to trypsin, showed the presence of such an enzyme body (irregularly present) in (a) trypsin treated cancer cases; (b) non-cancerous untreated cases; (c) cancer cases which had not received the trypsin treatment.

(27) That the exact constancy of this enzyme body in the urine with reference to the treatment was not ascertained. No enzyme body was found in urines in which there was anatomical decomposition.

(28) That the enzyme treatment as administered in the cases reported, and according to the suggestions of Dr. Beard, plus important details of regime, does not check the cancerous process.

(29) That it does not prevent metastasis.

(30) That it does not cure cancer.

Tuberculosis of the Knee Joint.—Dr. Irving D. Steinhardt (N. Y. Med. Jour., Aug. 28, 1909) states that in regard to tuberculous disease in bone and joints, knee joint disease comes third, tuberculous disease of the spinal column and hip joints being respectively first and second. About 50 per cent. of cases of this disease occur between the ages of two and six, but may occur as late as the twentieth year. The disease is usually situated in the epiphysis of the femur or tibia and less often in the synovial membrane. The principal features of the disease are: (1) a limp developing from no apparent cause; (2) pain and sensitiveness without redness and immediate large swelling in the knee joint only and without the constitutional reaction of a rheumatic nature; (3) change of contour of the joint, and particularly if accompanied by atrophy; (4) slow and insidious development of a flexion deformity; (5) "night cries," unguarded movements that cause a sharp sudden pain, accompanied by an involuntary cry of suffering; (6) persistent morning stiffness confined to one knee joint; (7) a sudden disposition of the patient to avoid activity and to guard the limb against quick change of position; (8) the appearance of these symtoms after infectious disease, or after trauma; (9) a positive tuberculin reaction in a suspicious but doubtful case in a child under five years of age where other tuberculous lesions can be practically excluded; (10) a positive X-Ray picture. A positive tuberculin test at present ought not to condemn a patient of tuberculous disease. The condition must be differentiated from rheumatism, gonorrheal arthritis, scurvy, hemathrosis, hip disease, injury, rachitis, synovitis, Charcot joint, Still's disease, new growths and nervous affections. When the disease is uncomplicated, there is a much better prognosis than when there is involvment of the lung or other organs also. The treatment is principally hygienic and conservative, the latter consisting of immobilizing the joint as completely as possible. Experience has shown that the more complete the immobilization the better the chances of preserving joint motion. Plaster of Paris and braces may be combined in certain cases. The Bier treatment is sometimes useful. When abscesses occur the author uses the circular rubber bandage to cause a general hyperemia of the part, cups the sinus openings with suitable Bier's cups, after which he applies the following ointment to the joint: Ichthyol, 25 per cent., iodine, 5 per cent., lanolin, 20 per cent., petrolatum, q.s. 100 per cent.

Laryngeal Tuberculosis.—Dr. Robert Levy (N. Y. Med. Jour., Sept. 11, 09) concludes his article with the following points which he would like to impress.

1. Pathological conditions of the laryngeal mucosa, especially chronic catarrhal laryngitis, are important factors in the aetiology of tuberculosis of the larynx.

2. Pain is not always present in laryngeal tuberculosis. When present it is not always conclusive that the lesion is tuberculous. It may exist without ulceration.

3. The beneficial effect of mercurial treatment in laryngeal lesions of tuberculous patients should not be accepted as positive proof of the value of this treatment in tuberculosis. It must be recognized that the differential diagnosis between syphilis and tuberculosis of the larynx is at times extremely difficult especially when the former exists in tuberculous patients.

4. Bacteriological confirmation of the diagnosis is often obtainable by examination of smears made directly from the laryngeal lesion.

5. It is necessary to again impress upon the general profession the curability of laryngeal tuberculosis. It is especially important that the prognosis be determined by a careful study of the lesion in all its characteristics.

6. Local treatment to be effective must be well selected both as to time of applications and method of procedure.

Intestinal Dyspepsia.—Dr. Max Einhorn (Med. Record, Sept. 4, 1909) has proposed to subdivide the functional intestinal dyspepsias into the following groups:

1. Digestive disturbances affecting all three classes of food stuffs (albumen, carbohydrates, fat) "Dyspepsia Intestinalis Universalis."

2. Digestive disturbances affecting only some of the food stuffs, "Dyspepsia Intestinalis Partialis."

In attempting to classify the symptoms the following are of importance: In the large group of disturbed starch digestion the subjective symptoms are relatively insignificant. They consist mainly in complaints of fullness in the abdomen, frequent eructations and expulsions of wind. The condition of the stomach varies. It may be normal, or hyperchlorhydria, subacidity or achylia may exist.

The group of disturbed meat digestion is characterized by the following syndrome: There is usually nausea present and a bad taste exists in the mouth; flatus are frequent and especially malodorant. The stools smell like decay. Patients may be well nourished, but they suffer very much. Diarrhœa is not necessarily present. The class of disturbed fat digestion is characterized by the occurrence of attacks of sometimes intense abdominal pains; the color is usually less consistent and of a lighter color. At times subjective symptoms are entirely absent. In the mixed group the clinical picture is still harder to define because the various symptoms are less marked. In dyspepsia intestinalis universalis the clinical picture is rather severe: lack of appetite; general debility; usually, though not always, diarrhœa is present. Abdominal pain is frequent. Achylia gastrica is nearly always present.

In the treatment it is not advisable to forbid the whole group of food stuffs that are apparently poorly digested, but it is better to give it in decreased amounts, supplemented with drugs which will facilitate the utilization of the food stuffs, whose digestibility is diminished in that particular patient. Our principal aim must be

a suitable arrangement of diet. In dyspepsia intestinalis universalis fluid and semifluid diets are indicated, whereas in the partial form the food stuff that is not well digested should be reduced and given in finely subdivided form.

Metabolic Osteo-Arthritis.—Nathan .(Am. Jour. Med. Sc., June, 1909) finds muscular atrophy always a very early symptom; in no other joint affection does it arise so soon or so markedly, while its progress is more rapid and out of all proportion to the other joint manifestations; probably it is not due to the joint disease alone. Stiffness is the earliest subjective symptom, most pronounced when the disease begins in the hands and especially in those engaged in fine manual adjustments; it is worst in the morning and gradually diminishes during the day, but the period of its persistence tends to endure longer until it is constant. Passive motion is scarcely limited at all; and the stiffness is in reality a gradually increasing weakness. Pain, both as to its character and intensity, is a most variable symptom; but when present it is always increased by pressure on the bone near the joint. The peculiar nodular swelling is very characteristic when present; but it may be marked by joint effusion and muscular contraction and joint deformity accompanying it. The most typical palisade deformities occur in the fingers, due to flexion of the middle and extension of the terminal phalangeal joints, deviation of the fingers to one side, and flexion of the phalangeal and phalangeal metacarpal joints. This deformity is caused by muscular contraction and tissue degeneration, the former operating alone in the early stages, but in combination with the bone destruction later; and refaction and softening of the articular ends of the bones is concomitant with the earliest joint symptoms. While in advanced cases the characteristic deformity of the fingers renders diagnosis easy, these symptoms are not so definite in other joints, and are absent in the early stages. Insidious in onset and always polyarticular and symmetrical, the peripheral joints are attacked first, and a number are usually affected simultaneously. Progress is usually very gradual, with long periods of quiescence in the mild cases. In the earliest stages and before there is deformity, refraction of the bones, particularly of the small joints of the extremity, can be detected by the radiograph; and these X-Ray findings, combined with the characteristic clinical phenomena, form a pathognomonic symptom—complex. At first the bone atrophy is subchondral, gradually advancing, until it finally involves the whole epiphysis; and the cartilage shows no changes in the early stages; but as the subchondral changes increase its nutrition becomes impaired, it loses its lustre, ulcerates and finally disappears. The disease is due to a metabolic derangement, seriously impairing joint nutrition. Uniformly good results have followed the use of thymus gland extract; two five grain tablets are given four times a day, the patient resting until all active joint symptoms have subsided when passive motion of all the affected joints should be begun. This is carefully and gradually increased until an arc of free motion is obtained, only limited by the shortened tendons. Immediately the patient can get on his feet and use his joints without irritation, all contracted tissues should be divided and the deformity corrected. Three or four weeks' immobilization is secured with light plaster-of-Paris bandages; and in a few days the patient is usually able to get about on crutches until the bandages are removed. The thymus extract does not act as a specific as far as the original constitutional condition is concerned; but it acts simply as a stimulant to the nutritive processes, thereby counteracting in some measure the etiological influence.

Typhoid Bacilluria.—Karl Connell (Am. Jour. Med. Soc., May, 1909) presents the following excellent resumé: Typhoid bacilli are present in the urine of at least 24 per cent. of all cases of typhoid fever. They are usually found in enormous numbers, appearing at about the same time that the temperature falls to normal; and they continue in varying intensity, sometimes intermittently usually for several weeks, tending to disappear spontaneously. The bacilluria arises from infection of the bladder urine from the blood, probably by way of the kidney. Typhoid organisms multiply most rapidly in urine of low acidity; highly acid urine is inhibitory; the urine at the height of the fever is usually highly acid and a poor medium; that of the declining stage is low in acid and a good medium for the growth of typhoid bacilli. Atony and overdistention of the bladder and the presence of residual urine are occasionally factors in permitting the typhoid bacillus to become established in the bladder urine. Severe cases are more subject to infection of the urine than milder cases. The eruption bears no consistent relation to the bacilluria. Albuminuria is not essential to the establishment of the bacilli in the urine. Albumen, however, enriches the urine as a culture medium and indicates such renal damage as might more readily allow the passage of bacteria from the blood. Absence of subjective symptoms is the rule; objective signs are usually present at some period of the infection; such signs are slight or moderate turbidity of the urine, a shimmer or swirling in the test tube, or the presence of a small amount of pus. The only dependable sign is the presence of the bacillus proved by culture from the catheterized or cleanly passed urine. Complications are rare. True cystitis occurring during typhoid fever is usually due to some organism other than the typhoid bacillus. Acute typhoid cystitis does occur, and a few cases of pure typhoid infection causing a chronic ulcerative cystitis are recorded, as also are chronic infections of the kidney. The bacilli usually disappear spontaneously. The eliminative agents seem to be (1) an inhibition of growth due to an increased acidity of the urine in the stage of active convalescence; (2) increased power and completeness of urination. The typhoid organism in the urine is virulent. Bacteriological examination of the urine is rarely of value in diagnosis. Typhoid bacilluria is a great menace to public health. Of all excretions containing typhoid bacilli, the most dangerous is the urine of the declining and postfebrile stage of typhoid fever. The feces are a great public menace during the active stage of the illness, but taking the course of typhoid fever as a whole, the urine is probably the great spreader of this disease. However, in chronic typhoid-bacillus carriers, the bile more frequently than the urine is the medium in which the bacteria have perpetuated themselves. As a routine in every case of typhoid fever, during the decline and convalescence, the urine in the bladder should be rendered inhibitory to the growth of typhoid bacilli. Bacilluria once established should be terminated by urinary antiseptics or by bladder irrigation. Obstinate ul-

cerative cystitis should be treated by surgical drainage. The passed urine of the typhoid fever patient at all stages of the illness should be disinfected with the same care as the feces.

Inguinal Hernia in the New Born.—A. Brocer (La Path. Infant. Nov. 15, 1908) finds children up to even 18 months, in cases of retarded physical development, to present predisposing conditions. Among the causes are rachitis, malformations of the peritoneum and prematurity; heredity, especially on the paternal side, is noteworthy. In many cases the hernia is already formed at birth; it frequently contains the large intestine (a peculiarity in infants and in the aged). Yet many hernias appear later the process being completed by the mechanical effort of coughing, crying and so forth. In a number of cases the cure is spontaneous; or is affected by the use of an ordinary supporting bandage. But ill-nourished and rachitic children exhibit no tendency to spontaneous cure, the condition remaining the same or becoming more aggravated; here the restlessness and constant crying of the child makes worse the hernia, which is in itself a cause of colic and discomfort. There is thus established a vicious circle by which prognosis is made unfavorable. The involved intestine frequently becomes the seat of impacted feces. Strangulation under one year is more common than later; in the second year Broca prefers the radical operation, which gives very favorable results.

The Insanity Defense for Crime.—J. B. Chapin, Albany Med. Annals, Aug., 1909) believes that from common observation and experience indulgence in passions is found to result in a loss of self-control and gradual degeneration which is acquired and not due necessarily to disease, inheritance or environment; if this is true of individuals it is equally true that whole communities and even nations may degenerate or be destroyed from a lax administration of justice. Human and divine laws are intended to secure the preservation of social order and the betterment of a community. The security of human life depends on their execution. If self-preservation is a maximum or principle which may be a sufficient defense of the individual such principle of self-preservation may in a broader sense warrant a community in adopting extraordinary measures for its protection as well as for the prevention of crime. Persons actually insane have been convicted of capital crimes; but this, Chapin believes, has been rare: it has more frequently happened that crime committed in an exacerbation of some one of the human passions have been condoned mainly through a doubt of the criminal's sanity—the doubt being created by the evidence of medical witnesses who would not have felt warranted in signing a certificate of insanity for detention in a hospital, as no single symptom had been presented that antedated the criminal act. Some believe the trial judges have freely opened the way to the introduction of extraneous issues and have permitted the introduction of highly technical questions and the use of scientific terms that neither imply advances in psychiatry nor one of universal acceptance. Names are new discoveries, unfamiliar and beyond the comprehension of the court and jury, having in themselves no significance; yet names have a mysterious significance "and work the court into a state of doubt or scientific indigestion." Insufficient attempts are made to differentiate the operation of the uncontrolled human passions from what is ordinarily understood to be the disease or condition we call insanity. Some amendment or change in the present practice of introducing the medical witness on the stand without bias or the suspicion of bias would be welcome; but it might be regarded as a gratuitous offer for a medical man to make suggestions about legal procedures that belong properly to the courts. The penologist must study whether it is possible for any modification of the penalties for crime to be made that would more justly recognize degrees of criminality.

Work in Therapeusis.—F. L. Hills (Bost. Med. and Surg. Jour., Aug. 26, '09) relates that at the tuberculosis sanatorium in Rutland, Mass., a system of work has been in operation for several years. All the patients who can exercise without symptoms are expected to work from half an hour to two hours daily. They make beds, take care of the wards, wipe the woodwork with damp cloths, carry trays, serve lunches, pick up about the lawns and walks, run lawn mowers, and the like. The lighter work is first undertaken; and such heavier work as carrying trays and running the lawn mower, is given after the patient has demonstrated his ability to do without reaction the lighter work. Thirty-eight per cent. among the 132 patients at Rutland are doing some work. The ultimate results of such exercise seems to be well exemplified by the subsequent history of those patients who worked while in the sanatorium and also played ball—a feature at Rutland for several years. During five years past 27 patients were on the ball-team; in addition all these men were working four and a half hours and their exercise was not restricted; picked men, they were selected from the daily average population of 180 men; all had been under observation and sanatorium treatment for several weeks or months, and had gradually been worked up to this amount of exercise. The disease was incipient in 12 and moderately advanced in 15. On discharge from the sanatorium their condition was: apparently cured, 3; arrested, 11; improved, 13; average duration of residence, eight months. The subsequent histories showed 22 (81.4 per cent.) to be doing full-time work, 2 are working part time, but have had relapses, and 3 are dead. Of these latter three two resumed intemperate habits after leaving the sanatorium, and died really through dissipation. One had a relapse after returning to work and died of a pulmonary hemorrhage. Baseball as a therapeutic agent is not here advocated; it shows however that in selected cases fairly strenuous exercise can be safely allowed—and is even advantageous in hardening the patient and building up his resistance.

The Diagnosis of Incipient Pulmonary Tuberculosis.— Dr. W. J. Pulley (N. Y. Med. Jour., October 2, 1909) includes not only those cases which have been defined by the National Association for Study and Prevention of Tuberculosis, as follows: Slight initial lesion in the form of infiltration, limited to the apex of one or both lungs, or a small part of one lobe. No tuberculous complications. Slight or no constitutional symptoms (particularly including gastric or intestinal disturbances or rapid loss of weight). Slight or no elevation of temperature or acceleration of pulse at any time during the twenty-four hours, especially after rest. Expectoration usually small in amount or absent. Tubercle bacilli may be present or absent, but goes further and includes those cases in which there is no discernable lesion, but where the history, subjective symptoms and

general aspect of the patient point conclusively to tuberculosis. Great care should be taken in making a correct and definite diagnosis in just such cases, for it is well known that the great majority of these patients can be cured if proper treatment is begun at this stage of the disease, and that many of these cases are incorrectly diagnosticated. It is difficult in many cases to make a diagnosis, but it can be made if the history, general make-up, surroundings of the patient, and other methods of investigation are gone into thoroughly and in detail. It should be emphasized here, that in so far as any good can come to the patient individually, nothing can supplant a thorough personal study of the patient and his complaint by the physician himself, for in this way only can the links of clinical evidence be welded into a complete diagnostic chain.

The family history, occupation, social habits are to be carefully considered. It is of more importance to ascertain the conditions in the lives of the patients, which depress their vital functions, rather than wasting time in looking for specific sources of infection. The local symptoms such as cough, expectoration, haemoptysis, pain in the chest, and dyspnea direct our attention immediately to the lung, but other conditions must be differentiated. Persistent or frequently recurring cough is very suspicious. The slow poisoning of the system due to the absorption of toxines and other products from the gradual growth of tuberculous infection of the lymph nodes manifests itself in a rise of temperature and chilliness, a feeling of languor, loss of appetite and flesh, digestive disturbances, increasing pallor, and nervousness.

The physical signs may first direct our attention to the condition, but in the majority of cases they are few, and in many cases none at all.

By means of percussion, mensuration, palpation and inspection, evidence is obtained in making a diagnosis, but this evidence must be corroborated by auscultation to be conclusive. Laboratory work, in the majority of instances, bears a secondary importance to a close and detailed study of the patient clinically. In other words, if any one part of the examination is to be depended upon for a useful diagnosis, let it be the thorough clinical examination of the patient. A positive finding of the bacilli in the sputum is of course conclusive, while a negative finding only means further examinations. By no means depend upon or wait for a positive finding of tubercle bacilli in the sputum before making a diagnosis and beginning treatment.

The author thinks that tuberculin as a diagnostic method should be the last thing used in our efforts to make a diagnosis. Our present limited knowledge of the action of tuberculin makes its diagnostic use comparatively rarely indicated.

The Persistence of Gonococcus in the Prostate.—Dr. G. A. De Santos Saxe (N. Y. Med. Jour., October 2, 1909) sums up as follows:

1. Thorough irrigation of the urethra before massaging the prostate is essential in order to exclude contamination of the prostatic secretion by pus and bacteria from the urtehra.

2. Injections of fifteen drops of a one per cent. solution of silver nitrate into the urethra twenty-four to forty-eight hours before prostatic massage sometimes reveal gonococci, when other means have failed.

3. A double stain of eosin and methylene blue in pure methyl alcohol, after the manner of the well-known blood stains, is excellent in the morphological study of prostatic smears. Gram's stain is essential, but is misleading, unless properly applied.

4. Cultures, while desirable, are often unsuccessful, owing to the capricious character of the gonococcus. Negative cultures are not conclusive.

5. Of 150 cases of chronic gonorrhœal infection, from six months to eighteen years' duration, sixty per cent. showed prostatitis. The older the infection, the more frequent was the prostatitis.

6. Of the 108 cases of prostatitis studied, thirty-one or 28.7 per cent. showed gonococci in the prostatic secretion. The older the infection the less probable was the finding of gonococci in the prostate. After three years, gonococci were found rarely, even after the most persistent efforts. Many and thorough examinations are needed before we can be at all certain that the gonococcus is absent from the prostate.

7. Mixed infection occurred in eighty-six per cent. of the cases studied. The gonococcus alone occurred in only five cases of 108, and all five were cases of less than one year's duration. The older the cases the more prevalent was the mixed infection. Staphylococci occurred in seventy-four per cent., bacilli in twenty-eight per cent., Gram positive diplococci in ten per cent., and streptococci in 7.6 per cent. of cases with mixed infection.

8. The absolute need of microscopical examinations of prostatic secretion was shown by the fact that palpatory signs were absent in thirty-eight cases (thirty-five per cent.), while thirteen cases (twelve per cent.) showed absolutely clear urine, although the smears showed prostatic infection.

9. Gonorrhœal prostatitis is curable by proper treatment in the great majority of cases.

10. Consent to marriage should not be given until all methods of examination have been exhausted, and until the possibility of a postmarital infection is practically excluded, in the present state of our knowledge.

Calomel is a drug that was one time flagrantly misused and abused, the abuse depending upon the misuse. The old heroic doses of ten grains and more as employed by our forefathers were naturally followed by severe cases of ptyalism, ulceration, and sometimes necrosis of jawbones. Gastro-intestinal irritation was also another concomitant, as well as other symptoms undesirable and far-reaching. The mild chloride of mercury is coming more into general use each year, and as now administered severe ptyalism is of rare occurrence. The disciples of Hahnnemann have always set great store by this remedy, especially in the treatment of children, and their benign methods of employing it have been followed by gratifying results. Children tolerate calomel well comparatively, and unless there be an idiosyncrasy to it larger doses than are usually given meet with no unsalutary results. Personally, I can say that I seldom give calomel to children in less than one or one-half grain doses. Very little griping and discomfort follow these doses even in children of six months and one year of age. If this statement were not backed up by a personal experience in hundreds of cases I would be reluctant to advise its administration in this dosage. When the systemic effect of mild mercurial treatment is desired small doses—say one-tenth and one-twentieth

grains—may be extended over considerable period of time. In anemia and nondescript conditions in which nutrition and the physical status generally seems below par, whether in children or adults, a long course of calomel in very small doses may be followed by happy results. Calomel affects every gland that secretes a fluid, although this may often be accomplished only indirectly or reflexly. It is one of our best drugs in acute diseases of both children and grown-ups, and is especially serviceable in typhoid and pneumonia. It is always useful in diphtheria, tonsillitis and other throat affections. Calomel is an excellent remedy in blood dyscrasias, and opposes any condition tending toward toxemia, for it has a marked effect as a systemic antiseptic. Old cases of rheumatism, dyspepsia, headache, etc,. are often permanently relieved by a course of calomel followed by salines. This drug being useful in almost every pathologic or unhealthy state, there naturally arises the danger of its over-use. Quinine being so valuable a remedy for so many diseases or abnormal conditions it is not so many years ago that this old stand-by was often employed without any clear indicaton, and often to the detriment of the patient. The same is true of calomel. There are many persons who do not tolerate calomel even in minimum doses. If it produces colicky pains with tenesmus and diarrhea, or symptoms of gastritis with spongy gums, this is sufficient to show that it is not indicated. Such symptoms, however, are rare when the mild chloride is timely and judiciously administered.

The complications of scarlet fever are considered by Gordon (Practitioner, Jan., 1909): In the accompanying nephritis the renal tubules are not as a rule diseased, but are merely pressed upon by the intestinal infiltration; the natural tendency is to complete recovery. We give these organs as little work to do as possible; diuretics, or renal stimulation of any kind is harmful. We encourage action of the skin by hot packs or hot baths, but when the electric current from the main is available, free perspiration is well induced by placing a cradle covered with hot blankets around the patient; to the top rail of this cradle several incandescent lamps are attached, and the current is turned on. Upon diaphoresis being established, this cradle is withdrawn and the hot blankets themselves envelop the patient, by which means the risk of exposure to cold is diminished.

The bowels are kept open by means of salines; coma, with suppressed urine, requires venesection and subsequent intravenous saline solution. Dry or wet cupping may be employed; but these are likely to be useless. Uremic convulsions are rare in children; they are not often alarming; they may conveniently be allayed by chloroform inhalation, followed by chloral hydrate per rectum. Diaphoresis is here again essential; we avoid pilocarpine, especially in children, by reason of its uncertain action. Albuminuria does not usually require special treatment; it does not require confinement or prolonged milk diet; the albumin is likely to disappear when such patients are fed in an ordinary way and are allowed to get up; the microscope will at once determine whether the albumin indicates a lesion or is merely symptomatic.

Scarlatinal endocarditis decidedly requires attention; rest in bed for the milder forms, with little alteration in the pulse-rate, rhythm or tension; the graver cases are no doubt rheumatic in origin and require the salicylates with the alkalies. The cervical adenitis of convalescence usually presages nephritis, the urine being frequently found to contain blood and albumin two days later. We avoid fomentations, but if the neck is painful we pack with cotton-wool and bandage firmly. The incision for pus (should this supervene) should be made at the lowest point, and a capillary drain inserted; it may be necessary to scrape thoroughly the abscess cavity, following this with a packing of dry antiseptic gauze. In hospital practice we separate the convalescent from the acute cases by transference to another ward after the third week, or perhaps sooner in mild cases. Before leaving the acute ward the patient gets a bath, is anointed with oil, puts on disinfected clothing and has his throat and nose well irrigated. Even in private cases the fauces and nose should be thoroughly irrigated during convalescence. A warm bath (daily) is followed at least three times a week by anointing of the skin. As much time as possible should be spent in the open air, with fairly active exercise. In all ordinary cases the diet should be whatever the patient can eat and enjoy; we should be careful that the milk consumed does not contain tubercle bacilli, as many cases of tuberculosis, both pulmonary and glandular, have no doubt been caused by the ingestion of tuberculous milk during convalescence from scarlet fever or measles.

Diffuse Septic Peritonitis.—R. S. Le Conte (Am. Surg., Aug., 1909) reports three cases in which the essentials of the Murphy treatment were practiced: speedy operation; removal of the cause with the least possible traumatism to the peritoneal cavity; the exaggerated Fowler position; and continuous entroclysis by the drop method. In six other cases the peritoneal cavity was flushed with warm saline solution, the head of the bed being slightly raised, the patient lying on the back, or being turned on the right side. Salt solution was given by rectum—six ounces every fourth hour. In these nine cases there was but one death—on the fourteenth day after operation, probably from secondary infection of the liver, plus secondary hemorrhage. In all instances the patients came to hospital in such serious condition that they were at once transferred from the receiving ward into the operating room.

Flexner's Antimeningococcic Serum and the Work of the Rockefeller Institute.—Writing from the Pasteur Institute at Lille, Grysez (Echo Médical du Nord, March 21, 1909) tells his French readers how important, although as yet little known, is the work of Flexner at the Rockefeller Institute in New York City. And how successful has been the study leading to an antimeningococcic serum.

Such praise from Europe must sensibly touch us. We have been in the habit of regarding German and French opinion as older and more firmly established. Calmette paid us a visit and took home with him some of the Flexner serum. Results from this have been excellent, according to Grysez.

In Akron, Ohio, Flexner used his serum first. Of eleven so treated the mortality was 27 per cent. Of nine cases treated otherwise, the mortality was 88 per cent.

Some French authors questioned the value of the American serum. In the employment of any serum the condition of the serum and the truth of the diagnosis are both to be established before we can settle values finally.

MISCELLANY

Tracheotomy in Laryngeal Cancer is not curative (O. Chiari, Am. Otol. Phin. and Laryng.). It serves only to relieve the laryngeal stenosis caused by the cancer, or comes into play as a preliminary to the radical external operation.

The syphilitic eruptions simulate those of many other cutaneous diseases; and much skill is oftentimes necessary in making the differential diagnosis; especially is this so if the eruption which is presented is of mixed character—composed of a syphilitic eruption and of one of an ordinary non-specific sort.

Physical Education.—P. C. Phillips, in Hygiene and Physical Education, believes that the attempt of the National Education Association to persuade congress to organize a bureau of physical education similar to those found in most of the progressive countries of the world should be aided by all good citizens.

Phagedenic Ulcer of the Abdomen.—W. H. Luckett describes a case (Am. Surg., Sept., 1909) in which procrastination, temporizing with inefficient internal medication and external dressings came near to losing the patient. Such rapidly extending ulcers should at once be thoroughly ablated with the actual cautery.

Epithelioma should be recognized directly it is seen; though a cutaneous affection it may attack the deeper tissues and even the bones, so that early diagnosis becomes important. The lesion may develop in a wart, a scar or a mole; and mistakes may be made by reason that it may be associated with syphilitic and tuberculosis lesions.

In general paresis the blood pressure is very variable (A. Schmiergeld, N. Y. Med. Jour., Aug. 28, '09); in most cases it seems lower than in normal individuals. There is apparently no relationship between the mood of the paretic and the arterial tension; elated paretics may have a high tension and depressed paretics a low tension.

An Open-Air School for children suffering from incipient tuberculosis has been opened in Rochester, New York; twenty children have been enrolled. They will have desks in a big tent, will be wrapped up warmly and will have their legs in bags to protect them from the cold. Buffalo, it is stated, is contemplating a similar school.

The Field Hospitals during the Hudson-Fulton celebration in New York City were well organized and entirely efficient. All along the line of march they were constantly busy. The majority of cases were of fainting; though several instances of epilepsy and even of heat prostration were reported. Few persons were injured to the degree of requiring surgical attendance.

Malingering by the production of skin diseases, observes American Journal of Dermatology, is far from being a modern invention; it has in all times been generally limited to women and soldiers—to escape the performance of duties by the artificial production of bad-looking cutaneous eruptions. Hysterical women are apt to use caultheridal plaster to produce large blebs.

Malaria Treated with Injections of Quinine.—G. W. Young (The Lancet, September 11, 1909) reports three cases of malaria occurring in young males. In all the stomach was intractable to quinine, and injections of ten grains inserted deep in the gluteal muscles were given, after which the stomach became more tolerant. All cases were quickly cured. The salt used was the acid hydrochloride. Of the cases reported one was of the tertian type, and the other two of the quotidian.

Dry Pleurisy, states A. Jacobi (Mo. Cycloped.) demands for its excessive pain morphine subcutaneously, over the seat of the pain; it will not cure the pleurisy but it will relieve and aid in curing the patient. Cough and sleeplessness caused by pain must be relieved by an opiate. "The physician may kill the patient by not relieving him; the fanatic interdiction of opium in the cases of infants is copied from one textbook into the next by those who treat people at their desks and not at the bedside."

Persistent Thoracic Sinus Following Empyema, states C. N. Dowd (J. A. M. A., Oct. 16, 1909) can be cured by decortication of lung and resection of the chest wall in 80 to 90 per cent. of the cases; after such operation the patient will not have lateral curvature of the spine; the lung capacity on the affected side will remain much diminished; nearly all patients are in good health and are not materially inconvenienced by this restricted lung capacity; the mortality from the operation is probably more than five and less than ten per cent.

Surgery in Algeria.—It is reported that a workman was stabbed in the heart and taken to the hospital in Constantine, Algeria, apparently dying. The surgeon, Dr. Martin, after anesthesia excised three ribs, opened the pericardium and removed three and one-half ounces of clotted blood. The heart seemed to have ceased beating; but Dr. Martin, after some massage, found its beats to be renewed, though irregularly. After sutures were inserted the organ was returned. The man survived the operation; and hope of his ultimate recovery was entertained.

A National Conference on Pellagra will be held in Columbia, S. C., November 3 and 4, under the auspices of the South Carolina State Board of Health. Physicians and sanitarians, states J. A. M. A., are cordially invited to unite with the local profession in the study of this disease. Though it is of comparatively recent recognition in America, it has been reported from seventeen States and is fast becoming a national health problem. There will be addresses, papers and discussions; and a number of clinical papers will be presented. Dr. Charles F. Williams, of Charleston, S. C., is the secretary of the board.

In Reading Systolic Blood Pressure L. Hill (Heart, July, 1909) considers two factors: the actual maximal pressure of the cardiac output; the conductance of the pressure wave by the artery. The force of the wave is damped down in soft arteries, as sound waves are damped by velvet. Hence blood pressure readings should be taken under uniform conditions, the patient lying horizontal, calm, not after exercise or taking hot food, tea, coffee or alcohol, not after the hand and wrist have been warmed or chilled. Comparatively synchronous readings of hand and foot arteries, the effect on the readings of oscillating the pressure up and down, and the effect of local heat gives information as to the state of the arteries, the value of which will grow with extended clinical observation.

THE CLINICAL VALUE OF PATHOLOGY.

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TO those doing much or only a moderate amount of laboratory work it would seem that there is little that can be said fairly in adverse criticism of the value of clinical pathology and the diagnostic laboratory. However, it is to these men that the skeptical attitude of many of our foremost surgeons and internists is most apparent and most fallacious. The mental state of bedside physicians and surgeons that more or less slowly becomes apparent to the man with the microscope, is a source of mild vexation and equally mild amusement and surprise. The clinician of that numerous type to which I have referred, seems to bear, in his relation to pathology, a dual mentality—to lead a psychic Jekyll and Hyde existence. At one time he feels that there is an accuracy and finality to laboratory work that is absolute, a mathematical exactness that always and ever can supply the equivalent for the x in the equation. At the same time, if the laboratory diagnosis conflicts with the clinical picture as interpreted by him, he is ready to discard the laboratory data as of a surety wrong because the diagnosis he has made proves it wrong. These two opposing mental attitudes lead to a state of mind which certainly must be comforting to and comfortable for these intellectual giants who are battling against disease and death, for, if put into words—though it never is—it could be summed up in two separate sentences, either one of which to be selected p. r. n. The sentence giving the greater comfort is: "Well, you see the laboratory confirmed my diagnosis, and you can't get around that." The other, only a little less satisfactory is: "What! the laboratory report excludes my diagnosis! Well, there is something wrong with the laboratory; keep on sending specimens till you get the correct report." And so in either case the clinician goes his way well pleased with himself and all the world; serene in the immutability of his diagnostic acumen. What the "something wrong" is he probably rarely or never defines even in his own mind. He may and frequently does hold the pathologist in high regard. "Not that he loves the pathologist less, but that he loves his diagnosis more."

I may be prejudiced, but as I recall the facts, it seems to me that the surgeons are more at fault (if doubting be a fault) in this matter than are the internists. Perhaps that is one reason why the diagnostic ability of the internist is greater as a rule, than that of the surgeou. Speaking in a general way, I believe that such a superiority exists, and I believe the more receptive attitude of the medical man has much to do with it.

It is the purpose of this paper to point out some of the mistakes made by men in shutting their eyes to the truth in laboratory reports, also to point to some of the weak spots of the laboratory system that occasionally bring some measure of disrepute upon it; and to attempt to show how strengthening these spots would minimize error and the discrepancies in bedside and laboratory diagnosis. Do not think that I hold the laboratory system and technique without fault; for I propose tonight to tear the veil of silence from some of the dark secrets of laboratory mistakes, and flood the light of truth on all their nakedness. There are men before me to-night who have carried in their conscience since the days of their pathological interneship, the knowledge of some grievous lapse in technical rectitude—some error in microscopic findings, perhaps—that has lain unshriven on their soul this many a day. To-night in the discussion of the paper, these men will throw off I hope, this burden of secret guilt and help us to learn through their errors, that even in the laboratory things are not always what they seem.

To account for whatever scepticism as to the value of laboratory aid in diagnosis exists are these factors: (1) The egotism of the clinician; (2) the exceptions to the general laws of pathology, and (3) last and least, the errors of the pathologist.

Let us discuss for a little while the examination of tissue from the operating room. I have felt until very recently that the pathologist had no legitimate use for any of the clinical data of the case from which the tissue had been obtained for microscopic examination and diagnosis. It would seem at first blush that request for such data is an admission of weakness on the part of the microscopist; that the use of such data means a diagnosis either in whole or in part clinical, instead of one purely pathological—microscopical. One who starts, however, as I did, with such an idea soon will come by the stepping-stones of his mistakes, as I did, to that position where he feels his reputation and the patient's welfare are both safer when he is leaning a little on some history abstract or a gross description of the tissue, or both; than are they when he throws these crutches away. You will all call to mind slide preparations on which you could make a diagnosis at a glance. But glandular sarcomata, lymphadenitis, metritis, and endometritis, and inflammatory exudates in omentum and mesentery and other organs are not always so readily determined. It is well for the microscopist first to examine the slide and make either an absolute or a provisional diagnosis, including location, if possible. But sometimes he will be vacillating between two possible diagnoses, and in such cases the clinical data is truly a friend in need. It is barely possible that even some of our good pathologists might call a certain tissue glandular sarcoma (small round cell type) if he had a history stating that a neoplasm was or had been present at some distant point in the patient's economy, and there had been loss of flesh and strength. If he had obtained a history stating that the gland from which the section was taken was a lymphnode draining an actively suppurating area, it is barely possible that the same pathologist might have called the same section lymph adenitis. The question springs naturally to one's lips, "Well, what aid would his diagnosis supply in such a case, that would have any value above the clinical diagnosis?" I will cite a recent case which, while not a direct answer, covers the point fairly well:

A young man had some enlarged cervical glands removed and sent to a pathological laboratory for examination. The pathologist whose duty it is to write the gross description, concluding such description, wrote: "The gross appearance is that of tubercular lymph adenitis." There was a delay of about five weeks, in preparing the tissue for microscopic examination. A few days before the sections were stained and mounted, the operator asked for a report, saying that there had been a rapid recurrence and that he felt the clinical picture was now very strongly suggestive of lympho-sarcoma. The pathologist within the next forty-eight hours reported, "Microscopic picture

is that of tubercular lymph adenitis; no evidence whatever of sarcoma." It may be worth the mention that the history abstract in this case was not a factor in the laboratory diagnosis; as it would have fitted sarcoma just as well as tuberculosis, and was not especially significant of either. That the patient was a young man was an aid in excluding some conditions, but not in differentiating between the two processes in question. Whether that surgeon yet feels that his subject has sarcoma I do not know; but I do know that the youth has not sarcoma, but has glandular tuberculosis.

Before leaving the subject of tissue examination, I desire to emphasize the importance of the gross description. It is important, first, for the knowledge it gives the man who has charge of that work—the knowledge of the gross appearance of diseased structures and the co-relation of the gross appearance to the microscopic picture. Not many months of this kind of daily work are needed to enable a man to rather closely approxmate the microscopist in his ability to diagnose. Secondly, this department is important because of the diagnostic aid the gross descriptions are to the microscopist, they being allied to the history abstract in this respect. They are of especial aid to him if he himself has toiled in the gross work. A third rare but important function, the gross description, has is in detecting an error of judgment on the part of the man (usually the pathological interne) who selects the sections for microscopic examination: Only a few months ago a pathologist examined under the microscope a section of normal uterine tissue. Having some curiosity as to the indication for hysterectomy in the case, he read the history and gross description. The latter described so accurately the appearance of carcinoma of the isthmus uteri that the pathologist was led to examine the gross specimen, which had been preserved, and he found that though the lower portion of the uterus showed marked carcinomatous involvement, the section for the microscope had been taken from the fundus uteri, where the tissues had a normal appearance. Aside from such an error as this, there are other possibilities of misplacing and confusing specimens which, unless carefully guarded against, will occasionally cause the faulty reports which sometimes cause a weakening of confidence in laboratory methods on the part of the physician or physicians interested in the case. Such mislabelling is very rare, I believe, in any laboratory, and it is still more rare for it to go undetected. When occurring, the responsibility must always fall in some measure upon the head of the department, though it is frequently factors beyond his control that make such mistakes possible. As to those infrequent errors in laboratory findings as a result of carelessness or inexperience, I wish only to mention that they should not be scored against the science of pathology, but against a system that generally puts the most inexperienced interne in the laboratory, makes his term of laboratory service only three, four, or six months, and piles on him the additional duties of the "scullion of the hospital staff."

The examination of sputum is a subject of more general interest than that we have just left. It is most frequently examined for the tubercle bacillus; less frequently for the pneumococcus and Pfeifer bacillus, and rarely for Cushman's spirals, actinomyces, Charco-Leyden crystals and pus organisms. "For the tubercle bacillus!" you exclaim. "Well, if anything in laboratory work is accurate that is, a man either finds the bug or he doesn't and there's an end to it." That, however, is only true if the observer be both careful and experienced. Of the two attributes, the care is much more important than the experience. The technique of selecting the most promising portion of the sputum, of fixing and staining and counter staining, while very important is so generally known that the bare mentioning suffices for the purposes of this paper. The point I wish to emphasize is the necessity of care and skill and conservatism in examining under the microscope the stained specimen. The ability to distinguish artefacts stained pink as a result of boiling, or lack of uniformity in thickness of preparation, or imperfect decolorizing. The moral courage, for such it may be termed, to reject even typical appearing rod shaped and slightly bent objects of a red color, if they have other objects near them of a pinkish or red hue, or if they are tangled in a cluster of epithelial cells or other aggregations. The patience to search on and on until you are rewarded by finding typical red rods lying free in a uniformly blue field; or failing in this the patience to discard all doubtful findings and try for a new and better stained specimen. The man may seem to you but of little skill, who can not avoid error in this matter; but the turned up edges of a few epithelial cells in a preparation have sent one man from a bank president's desk to the woods and a cot in the open air, for nothing worse than a chronic bronchitis, and the mistake was made by a man of considerable experience and care. I know of a few other instances somewhat less striking.

As to the value of a positive result in a careful sputum examination for the tubercle bacillus there is no question. It is one of the few laboratory findings that, when the carping clinician comes with his criticism that it does not correspond with the history or physical signs, we can shake under his diagnostic nose and cry in a loud voice: "Back, back to the woods!" Now, with a negative report we can assume no such strident tone; for, although we may quote Osler and an army of others to the effect that frequently the tubercle bacillus cannot be demonstrated in cases that are typical and even far advanced; we know that the internist or surgeon can ill conceal his disgust when we report thus on such cases.

The value of blood examinations: This brings us to the battle royal between clinician and pathologist. Back and forth over this ground has waged the wordiest warfare of these Montagues and Capulets of medicine. And the casus belli seems to be that the clinician will acknowledge no exceptions in pathology. Yes, it is true that while bronchial breathing is the most important sign in pneumonia; it cannot always be obtained; yes, the clinician is familiar with that fact. Would he consider the absence of that sign in a well marked case a reason for discarding the use of the stethoscope, in all cases? No, indeed no. Also certainly not. Yet the same man with an inconsistency which is almost phenomenal will say: "Here is a pus case and you can't get a leucocytosis." Or, "Here is a typhoid, uncomplicated, and you get a leucocytosis. What good is a blood examination anyway?" But I say unto you and unto the medical man and the surgeon, large and small, that if the clinical methods and signs at your and their command were half as exact

and constant as those of the laboratory at the present time the millenium of medicine would be a century or two nearer than it is.

We know that in appendicitis the leucocytes may be as high as 52,000, as low as 4,800 (Cabot's series); and yet of the men present all of whom have done some leucocyte counts in such cases and several of whom have done many such counts, I doubt if one has ever seen a case of appendicitis with pus, that did not present a leucocytosis. If then the leucocytosis is general and so nearly constant why give the rare exception any more serious consideration from a diagnostic standpoint than to recognize it as an exception. Its prognostic possibilities, however, may be fraught with extreme import; meaning generally either a subsiding catarrhal attack or the terminal stage of an overwhelming pyogenic infection. And here, if I have not already done so, let me point to the fact, that while many expect of the pathologist in this class of work an absolute laboratory diagnosis; he himself, lays claim to no such diagnostic acumen. His endeavor is merely to supply an accurate picture of the blood, and, almost always, this *with the bedside data,* will enable the pathologist to make an exact diagnosis of the pathologic process, and frequently will enable the clinician to do the same.

The pathologist does not say: "All cases of intestinal parasites have an eosinophilia." He does not say: "All cases of whooping cough show a marked lymphocytosis." He does not say: "All surgical cases with a poly-morphonuclear count above 84 per cent. mean pus." Nor, reversing cause and effect, does he say: "All cases of eosinophilia have intestinal parasites; all cases of lymphocytosis have whooping cough; all cases of marked neutrophilia, pus." But with clinical data of intestinal disturbance in the one case and data of cough or exposure to infection in the other, or symptoms suggestive of pus in the surgical case, he is able to make his diagnosis and stand firm in his faith in cases where without the laboratory work it would have been impossible.

We have touched tonight only on the elementary subjects of clinical pathology and we would do well to stop right here. There are vast subjects being worked out in our own and European laboratories and the medical world stands tiptoe and with quickened ear to hear the final judgment on opsonins, agglutinins and hæmolytics. The work of Rogers and Beebe on the pathology and serum treatment of goitre was discussed at the first meeting of this section, over a year ago. It is still being discussed. The spirocheta of syphilis has in about a like length of time wriggled its way to a fixed and prominent position, though it is not likely to hasten the initial dose of mercury. The cancer of one mouse, has, through different hosts, circled the world, yet in this country Gaylor and his apostle have but a few converts to the hypothesis of the bacterial origin of malignant neoplasms. The diagnostic and research laboratories today are in travail; to-morrow—the to-morrow that will be within the ken of you and me—these creative forces will give birth to a newer and a better pathology, a greater bacteriology, a more marvelous serumtherapy. In the meantime like the volunteer organist, "They're doing the best they can."

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INFLAMMATORY LEUCOCYTOSIS.*

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CABOT defines leucocytosis as "An increase in the number of white blood cells in the peripheral blood over the normal in the individual case, this increase never involving a diminution of the polymorphonuclear varieties, but generally their marked absolute and relative gain over the number previously absent."

Many observers believe that leucocytosis is not a real increase in the total number of white cells in the blood but merely an increase in the peripheral circulation, the cells being attracted from the internal organs. In its widest sense it would include the leucocyte increases found in the various types of leukemia, but these are more or less permanent and are made up of all the varieties of white cells.

It is in its restricted sense as a transient occurrence in many acute infections, and as a distinct, marked increase of the polynuclear elements that the term is more commonly used. And it can also be defined as an inflammatory leucocytosis.

Many hypotheses have been advanced as to the exact significance of this phenomenon.

Virchow believed it merely represented a regenerative effort of the bone marrow to replace destroyed white cells. Others maintain, and probably more correctly, that this outpouring into the peripheral blood is due to direct chemotactic action of bacteria or their products in the circulation. The polynuclears are particularly the actively amœboid and phagocytic cells and have a marked chemotactic attraction toward bacteria enveloping and digesting them.

Metchnikoff believes that this phagocytosis is an essential feature in inflammation and the chief mechanism in the production of immunity.

According to Ewing: "Leucocytosis represents Nature's efforts to rid the blood and the system by means of leucocytes and their products, of the bacterial and toxic causes of disease." Hyperleucocytosis occurs normally in certain conditions as in the newly born, during digestion and pregnancy, in the post partum state, and after violent exercise, massage and cold baths. In this physiological leucocytosis, all the white blood cells are increased thus differing from the pathological varieties.

In certain gastro-intestinal diseases, notably carcinoma of the stomach, the absence of digestion, hyperleucocytosis is a valuable symptom in the differential diagnosis between this disease and other affections of the alimentary canal.

Inflammatory leucocytosis being a pathological condition is found, as before stated, in many acute infectious diseases and is of great diagnostic value.

In Asiatic cholera, relapsing fever, scarlet fever, diphtheria, syphilis and erysipelas, it occurs to a moderate degree. In pneumonia, small-pox in the suppurative stage, septicæmia in its various forms, actinomycosis, glanders, beriberi, acute rheumatism, septic and cerebro-spinal meningitis, endometritis, cystitis and gonorrhœa, it is more marked and constant.

In all infections due to the pyogenic organisms such as appendicitis, abscesses of all kinds, osteo-myelitis and pyosalpinx, and in inflammatory conditions of the serous membranes it is very marked and constant.

*Read before the Brooklyn Pathological Society.

Its absence in certain other affections in which we would naturally expect its presence, is, from a diagnostic standpoint, one of the most important symptoms of these diseases. It does not occur in uncomplicated typhoid. Simon maintains that if found in a suspected case of enteric fever it is more than probable some complication exists or that the diagnosis is wrong. It is also absent in malaria, most cases of influenza, measles, and in tuberculosis when not associated with secondary pus infection.

Its diagnostic value in these diseases may be seen in the consideration of any given case in which the signs and symptoms may either simulate typhoid or appendicitis. A blood current count will enable us to differentiate.

If during the course of any disease in which it is normally absent, it is found, we may conclude some complication is about to occur. In a typhoid case, it may indicate a beginning perforation. In some blood examinations the writer was able to make while working in the Clinical Laboratory of Cornell University Medical College, a leucocytosis was observed in a case of chlorosis some days before any symptoms of a beginning lobar pneumonia were discoverable.

According to Simon: "The increase in the number of leucocytes in acute infections is directly proportionate to the intensity of the infection and the power of resistance of the individual."

It may happen that no leucocyte increase occurs when the infection is extremely virulent. This would indicate that the resisting power of the patient was practically nil and would be of grave prognostic importance. Death in pneumonia almost invariably takes place when this phenomenon does not develop; the exception being in cases in which the infection is so mild as not to call forth this evidence of the resisting power of the organism. Osler considers the number of white cells in a cubic millimetre of blood to vary normally from 5,000 to 7,000, and taking 5,000,000 red cells as the average number in a cubic millimetre of blood, the ratio normally between the two would be 1-714 to 1-1000.

Cabot has found, however, in healthy individuals the actual number to vary from below 5,000 to higher than 7,000. The normal limit would therefore be better extended from 3,000 on one hand to 10,000 on the other. Any marked increase over 10,000 is pathological—provided in making our count, we exclude the causes of physiologic increase before mentioned.

The leucocyte increase may run as high as 42,000 in a cubic millimetre. The best time to make a count so as to exclude digestive increases is, when possible, just before a meal, preferably before breakfast. Also to make due allowance if the individual is in the pregnant state or after exercise and cold bathing.

In counting, my preference is for the same pipette in the Thomas Zeiss apparatus that is used in the red cell count. In the larger pipette, which is specially made for the leucocyte count, the calibre is so large that in immersing it in the diluting and staining fluid if not kept approximately horizontal the blood is apt to run out and our count would be false. Several drops of the mixture should be counted and an average taken, as this lessens chances of error. One further point, as Dr. C. N. B. Camac, in his excellent article on the blood has stated, we must always remember to shake the mixture well each time we count a fresh drop, as the white corpuscles settle rapidly in the bulb.

Dr. Thomas R. Brown, of Johns Hopkins University, in an article written to answer the criticisms of Dr. Deaver and others as to the practical value of this method of diagnosis in surgery, says: "Its presence or absence determines whether the surgeon is dealing with an inflamed appendix or merely with a case of hysteria, or with floating kidney, gall stones or renal calculi; it is also a guide as to the severity of the infection. When the leucocytes are above 18,000 to 20,000, an immediate operation is demanded. If below that, the observer can wait, but by continuing systematic counting, can determine whether improvement is taking place or perforation is impending."

He believes that no operation should be undertaken by the surgeon without such a count and if severe infection is found to be unaccompanied by a marked leucocytosis, operative interference is practically useless, as the prognosis is almost surely fatal.

As illustrating the value of this means of diagnosis, Dr. Brown gives the history of a case of appendicitis coming under his observation. Immediate operation in this case was undesirable on account of the poor general condition of this individual. Leucocyte counts made every four hours showed variations between 15,000 and 20,000 for a period of twenty-four hours, when they suddenly jumped up to 32,000. An operation was immediately performed and a beginning perforation was found in the appendix.

Obscure cases of appendicitis may be met with in which the appendix is situated so deep in the pelvis that the usual signs of pain, nausea and muscle spasm may be absent or the case may be one of the fulminating variety, the appendix becoming overwhelmed by the severity of the invasion so as to become almost at once gangrenous. A blood count would immediately clear up the diagnosis in such cases.

DIFFERENTIAL COUNT.

While the mere numerical estimate of the leucocytes is as we have seen of great value, it is of vital importance to determine the relative percentages of these cells.

This can only be obtained by means of the differential count. With a low count, septic conditions might be overlooked if this were not done.

One thousand leucocytes should be counted, classified and the percentages of the various varieties estimated. These percentages in normal blood are fairly constant, so that variations are easily discoverable.

Eighty-five to 95 per cent. of polynuclears indicate severe sepsis. The technique of examination requires a mechanical stage so that the smear may be gone over in a systematic manner. In the stained films although the primary purpose is the determination of the number and variety of the leucocytes, the presence of nucleated red cells, variations in size and shape, and the presence of malarial parasites can be noted. Leucocytes not normally present in the blood, such as myclocytes, may also be discovered.

MALARIAL PARASITES.

A diagnosis of malaria based on clinical symptoms alone has frequently been proven false; tubercular syphilitic and pus infections being mistaken for it.

Typical malarial intermittents are readily diagnosed, but in the atypical forms and more especially in pernicious varieties of infection serious errors may occur.

Had microscopical examinations of the blood of the soldiers in the Southern and Western camps in the Spanish War been made, the mistake of confounding this disease with typhoid fever would not have happened. A clinical diagnosis should in every instance be confirmed by an examination of the blood, which may be tedious if the parasites are not abundant, but if the disease is malarial, they will be surely found.

As illustrative of an atypical form of malarial infection, the writer had recently under his observation a case presenting the following symptoms:

The patient, a man of about 40, was suddenly taken ill with fever, prostration, vomiting and abdominal pain, focalizing at McBurney's point, all apparently pointing to an acute attack of appendicitis. A blood smear was taken for a differential count which on examination showed no leucocytes present but on the contrary large numbers of cresentic shaped parasites.

Specific medication with quinine rapidly caused a disappearance of all these symptoms.

On enquiry I found that the patient had been at Panama the previous summer and traveling from one point to another at night in an open boat was badly bitten by mosquitoes. This was followed in some days by a febrile reaction which soon subsided and was forgotten until revealed by my questioning.

In children malarial infections rarely follow a typical course, some fever, malaise and digestive disturbances being present, but no chill is noticed. Undiscovered, it brings on a marked anemia, owing to the destructive action of the parasites on the red cells.

In all cases of anemia in children, particularly if the history reveals a possible infection, owing to a visit to a known malarial district a routine examination of the blood should be made.

In the writer's experience, malarial parasites have been often found in these cases.

Both Cabot and Ewing state that the examination of the fresh blood is the readiest method of discovering the organism and this is best done just before the expected chill.

This method takes but a short time and is applicable to the bedside, office, or dispensary and requires no complicated apparatus or extended knowledge of laboratory technique. It shows the amœboid movements of the intra-corpuscular forms of the parasites, together with any phagocytosis on the part of the white blood cells that may be taking place. Also any of the actively motile flagellated bodies if present.

Its limitations have been found by Ewing to be in the early, small, unpigmented organisms, these being more readily found in the stained smears. When the organisms are half or fully grown and have become pigmented, the active rapid motion of these pigment granules are diagnostic and cannot be mistaken for anything else.

For reference as confirmatory of the fresh blood, stained blood films are necessary. They show us better than the fresh specimens, the minute structure of the parasites, and if the smear be a good one, evenly spread, an enormous number of corpuscles can be examined in a short time as the stained organisms show very clearly.

Several methods of staining can be used, as the organisms take up readily all the basic aniline dyes, preferably methylene blue.

Futcher's method which consists in fixing the smears with formol alcohol and then staining with a carbolated solution of thionin is of especial value in the hyaline and ring forms of the young parasites of the estivo autumnal type which often elude detection in the fresh blood.

Another method giving excellent results is Goldhorn's. It consists of two solutions, eosin and polychrome methylene blue, fixation being made by methyl alcohol. It is a rapid method and gives brilliant pictures staining particularly the chromatin bodies in the parasites. Another stain is Jenners which can also be used for general blood work. It is rapid, is a double stain and contains its fixing agent, so that one flooding of the cover slip is all that is necessary.

Wright's method, described in the Journal of Medical Research, is a particularly valuable way of staining the parasites as well as the white and red cells. The stain is durable and improves on keeping, thus differing from nearly all our blood stains, especially the Goldhorn, which requires frequent examination and correctiton.

The Nocht-Romanowsky method as modified by Dr. Ewing of New York is not as rapid as the others mentioned, requiring several hours, but gives excellent results.

The specific micro-organism of malaria are unicellular and belong to the class of protozoa, the lowest form of animal life. They differ from the bacteria in that they have never been cultivated on any of the laboratory media, not being able to maintain their existence outside of their host, thus being purely parasitic in nature.

Representatives of these protozoa are often found in the blood of the lower animals, such as the rat, frog, the tortoise and in various birds and fishes. Their life cycle has been minutely studied since their first discovery by Laveran in 1880 and it is now known that in addition to their intra-corporeal stage of existence in human blood, they are found outside the body in certain mosquitoes of the genus anopheles.

Grassi and Feletti have confined the name Haemamœba malariæ to those forms of the plasmodium which belong to the typical varieties of ague, while the term Laverania malariæ is reserved for the crescentic organisms also known as the hematozoon falciparum of Welch.

Three varieties have been identified and are known severally as the tertian, quartan and estivo autumnal parasites.

Some of the Italian observers, as Golgi and Macchiafava, consider them as distinct varieties, not interchangeable; others believe in the unity of these forms regarding them more as modifications of the one polymorphic parasite.

MODE OF INFECTION.

The investigators, notably Koch, in the paludal districts about Rome, have settled the vexed question as to the mode of infection. They have found it did not take place through the digestive tract, but by subcutaneous inoculation by suctorial insects such as the mosquito. Koch believes the parasites remain in the blood of malarial subjects during the cold months. In the warmer months when the mosquito becomes active, he acts as the carrier or intermediate host from an infected to a non-infected individual.

The manner in which the mosquito acquires the parasite and conveys it to man is as follows:

On sucking the blood of a malarial subject, the organisms are taken into the stomach and intestines of the insects, there fertilization of the parasites occur with the formation of rounded capsules, which become encysted in the wall of insect's stomach, pass through several stages of development and finally pass to its salivary glands where they remain until the mosquito bites again, when through the muscular effort of sucking blood, the parasites are injected into the tissues of the person on whom the insect is feeding.

Thus we see the life cycle of the organisms is asexual in the human body, sexual reproduction taking place only in the insect host. In all protozoa, the faculty of non-sexual reproduction of multiplication can occur but it becomes exhausted after a variable time and the species would become extinct did not sexual congress take place.

This will explain the spontaneous recovery of malarial subjects on their removal to a non-infected district, although this asexual multiplication may take place in some individuals for periods of three years in the quartan organisms, two years in pernicious and malignant tertians, and between these two periods in the benign tertians.

Certain forms of the parasite are common in all varieties of infections.

1. The hyaline, non-pigmented, intra-cellular bodies.
2. Pigmented intracellular organisims, a later stage of development.
3. Segmenting bodies, a still further stage of development, seen just prior to or during a chill and which indicate an approaching breaking up of the parasites, thus giving rise to a new generation.
4. Extra-cellular pigmented and flagellating bodies.

Another form found only in pernicious malaria when it has lasted over a week, are crescentic, ovoid and spherical bodies.

TERTIAN PARASITE.

This parasite passes through its cycle of existence in 48 hours. Its segmentation is always associated with a febrile attack, these paroxysms occurring regularly at intervals of 48 hours and lasting 10 to 12 hours.

When a double infection with two groups of organisms is found, there are daily or quotidian paroxysms. The single Tertian affections, according to Thayer and Hewetson in their classical monograph on the malarial fevers of Baltimore occur more commonly in the earlier months of spring and summer and are the mildest forms of the disease.

The double tertian affections which are more severe form the majority of the cases later on.

The tertian parasite in its youngest form is a hyaline nonpigmented, and shows a large nuclear body of chromatin. When stained by the Nocht method, it has an outer ring of basophilic protoplasm inclosing a clear achromatic substance called the milky zone. A few hours later, it shows the ring shapes.

After a period of from 6 to 8 hours the protoplasm in body develops irregular masses and pigment appears and the single chromatin mass subdivides.

As in this stage the organism is in its most actively amœboid state, we have the peculiar appearances so well recognized. Toward the end of 24 hours the parasite occupies three-fourths of the swollen cell, and between the 24th and 40th hour, the parasite is fully grown, occupying four-fifths of the cell. The pigment granules become quiescent and collect into the interior of the mass which becomes reticulated, and the protoplasm divides into a number of oval bodies which closely resemble the petals of a flower.

These bodies which are the sporules of the parasite are shown in rosette form. When their envelope bursts, the sporules, which in the tertian organism lie free in the blood and are supposed to infect fresh blood cells, giving rise to a new generation of the parasite. This sporulation is always accompanied by a chill in the infected individual.

In this stage of life cycle of the parasite, it is most affected by the action of quinine and is easily destroyed, hence the importance of the administration of this drug a short time before the expected chill.

In all stages of the growth of this parasite, the invaded red cell is much enlarged and swollen.

Quartan parasite is more rarely found in this climate. Out of 195 cases of malarial infections in soldiers returning from the Philippines under observation by Dr. Craig in the U. S. Army Hospital in San Francisco, during a period of fifteen months, 44 were tertian, 150 estivo-autumnal and only one quartan.

Its life cycle lasts 72 hours. As in the tertian organism, the febrile paroxysms are definitely associated with the segmentation and bursting of the sporules into the blood of groups of the parasite. Occasionally double or triple infections of this parasite are found with corresponding variations in the febrile manifestations. Paroxysms may occur daily in these triple infections. The parasite in its earliest form has a hyaline body, is not distinguishable from the tertian organism although we may suspect its presence from the shrunken appearance of its cellular host, thus differing from the swollen cell containing the tertian parasite.

The quartan hyaline form is somewhat more refractive than the tertian. As it increases in size, the pigment granules become coarser and in the fresh blood it shows slower amœboid movements than the tertian. You will notice that in this slide on account of these slower movements of the parasite, you do not see any of the distortions of its protoplasm with the threadlike development as are seen in the tertian.

AESTIVO-AUTUMNAL FEVER.

This type of infection is found in fevers in the late summer and fall. Most of the cases observed by Thayer and Hewetson occurred in September and October. It includes most of the cases of pernicious malaria of tropical and subtropical regions. It is often present without giving rise to typical symptoms.

Masked malaria, in which the symptoms are obscured by other complicating diseases and latent malarias which exist without producing any appreciable symptoms, but the parasites can be found in the blood, are of this type.

In some cases the temperature may be little above the normal or even subnormal, although the infection is a grave one. This may be due in some cases to some individual peculiarity or to a certain degree of immunity in long standing infections. In those cases the life cycle of the parasites go on regularly, fresh cells being infected without any febrile reaction. Thayer considers this due to the fact that occasional doses of quinine taken are enough to weaken the parasites and

consequently their toxins, but not to completely destroy them.

This emphasizes again the importance of routine blood examinations in individuals coming from known infected districts; as Dr. Craig found that large numbers of soldiers returned from the Philippines showed estivo autumnal parasites in their blood with few symptoms. He found in the masked forms, symptoms referable to other infections, such as diarrhœa, acute and chronic dysentery, pneumonia, typhoid, hepatic abscess, pulmonary tuberculosis, chronic gastritis, and even melancholia, insanity and rheumatism.

In most of the cases observed the parasite was found in the early hyaline ring form, the most difficult to recognize and easily overlooked by the inexperienced observer.

Most of these atypical malarias were confused with diseases of the intestinal canal, particularly dysentery and diarrhœa. Large numbers of them showed such marked improvement after the administration of quinine that these dysenteric symptoms were undoubtedly due to malarial infection alone. Fourteen cases diagnosed as pulmonary tuberculosis having a daily elevation of temperature, emaciation, and night sweats, contained abundant parasites in the blood. Examination of the sputa was negative and quinine caused a rapid disappearance of these symptoms.

Dr. Craig relates the history of a case of pernicious malaria of this tropical type in a young girl not away from San Francisco in over two years. He considered that infection might have taken place from a mosquito that had imbibed the blood of some returning soldier from the Philippines and that there is grave danger of severe malarial types of infection becoming endemic in any locality in which there are large numbers of infected subjects with tropical malaria, provided mosquitoes of the genus anopheles are also present.

Its youngest forms are similar to the tertian and quartan varieties, but it differs from tertian in not occupying an enlarged red cell and from the quartan, by the smaller size. It may reach its development in from 36 to 48 hours. At an early period, it shows a thickening of one segment of its ring, giving rise to a shape known as the signet ring forms.

Mutiple infection of the cells with these young ring forms, is, according to Ewing, very common in this type of malaria and is proportionate to the severity of the infection. Also that the latter forms of this parasite are rarely seen in the peripheral blood reproduction taking place in the spleen and bone marrow. As the organism increases in size, it invades a large portion of the red blood cell and then reaches the segmentary stage. The rosette form is rarely seen in the peripheral circulation and differs from the tertian forms in being smaller, its cellular host shrunken and its spores of a smaller size.

The crescentic and ovoid bodies are only observed in æstivo-autumnal fever after it has lasted some time and the crescentic forms may persist for some time after the cessation of the febrile paroxysms from the administration of quinine or from spontaneous recovery, being more resistant than the amoboid forms.

They are derived from the pigmented intra-cellular forms, the crescents developing from the ovoid bodies. It is believed by Councilman, Bignani and Bastianelli that they are found in the bone marrow, as these observers have found excessive numbers of young forms in the tissues when they are scarce elsewhere.

Extra cellular pigmented bodies are found in all three varieties of the parasites. They are derived from the pigmented intra-cellular bodies that leave their host without undergoing segmentation, and appear in the blood as such. They may increase considerably in size so as to become as large as a polynuclear leucocyte. Flagellating bodies may be developed from the crescents and also the extra cellular forms. They may be seen at times in the fresh blood, attention being drawn to them by the movements of their cilia or flagella to and fro, scattering the red cells to right and left. Ewing believes these bodies represent the male element in the sexual reproduction of the parasite and the beginning of a new cycle of development which takes place outside the human circulation, in the body of the mosquito.

PIGMENTED LEUCOCYTOSIS.

One further body found in malarial blood is of frequent occurrence long after the parasites have left the circulation. This is the pigmented leucocyte. When seen, diligent search should always be made for the parasites. These pigmented leucocytes are found in most malarial infections, being more numerous in severe long continued cases.

They are of the mononuclear and polynuclear varieties and contain not only pigment granules but fragments of the malarial organisms, the polynuclears frequently holding the rosette forms of the parasites.

Metchnikoff maintains that this phagocytosis is an active protective process, by means of which the malarial organisms are engulfed and destroyed both by these ordinary varieties of leucocytes and also by the large macrophages or phagocytes of the spleen and liver.

This would explain the cases of spontaneous recovery from infection, when a patient had merely changed his residence from a malarial district.

In conclusion the writer desires to take this opportunity of expressing his thanks for much valuable assistance given him by Drs. Camac and Hastings, while studying with them the pathology of the blood in the clinical laboratory of Cornell University Medical College.

834 UNION ST.

The Sciatic Nerve Resected.—K. A. J. MacKenzie (Ann. Surg., July, 1909) excised 10 3/4 inches of the sciatic nerve for sarcoma originating in the peripheral connective tissue. Sixteen days later the internal popliteal nerve was dissected out, split to one-half inch of its origin, and a reflected flap inserted into the sciatic stump. Forty-six days later the external popliteal was similarly treated. At the end of eight months there was recovery of motion and power in big muscle groups, practically complete recovery of trophic function, extensive photopathic recovery, much epicritic recovery, almost universal recovery of deep sensation, and independent and unaided locomotion. MacKenzie considers his success due to early operation, the implantation of large "nerve elements" to give path for regeneration, implantation in muscle-beds to avoid early involvement in scar, and absolute sepsis.

PLEURISY.

BY JOHN B. HUBER, A.M., M.D.,
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ACUTE inflammations of the pleura are frequently met with in practice; and the clinical types are: Dry pleurisy; pleurisy with effusion; empyema; hemorrhagic pleurisy; diaphragmatic pleurisy; encysted pleurisy; and interlobular pleurisy.

DRY PLEURISY.

We call this form also fibrinous or plastic pleurisy: and it may be primary (idiopathic); or secondary to some other disease. The *etiology* in primary cases may be bacterial; these cases very frequently come about through exposure to cold and wet, following upon some such predisposition as overwork or poverty. In secondary cases some such affection or lesion as pneumonia, tuberculosis, abscess, gangrene, cancer, pericarditis, hemorrhagic infection or wounds of the pleura, has preceded the plastic inflammation. The *pathology*: In such cases we find the affected pleuritic area dry, lustreless and coated with fibrin; later the opposed pleural surfaces adhere. Such adhesion is oftentimes, indeed generally, found on autopsy, in any part of the pleura, apical, basal or costal. The *symptoms*: There may be an initial chill, followed by slight fever. There is sudden, sharp pain; and throughout the disease there is the "stitch in the side" which is increased by cough, by deep respiration, and by motion. The respirations are consequently shallow, catching and irregular. There is a dry cough. The *physical signs*: On inspection the respiratory movements are diminished; especially does the affected side expand less, whilst the movements of the healthy side increase. The breathing is quickened. Palpation demonstrates decreased vocal fremitus, but friction fremitus until there is adhesion of the inflamed surfaces. The percussion is at first negative; but if the fibrinous or plastic exudation becomes abundant we shall get dulness over the seat of the inflammation. On auscultation of breathing we shall find the respirations diminished in intensity, but quickened and the rhythm interrupted (jerking). On auscultation of voice we shall have diminished intensity. We shall also have pleural—rubbing, crepitating—friction sounds.

PLEURISY WITH EFFUSION.

Here we have to do with effusion of plasma—that portion of the blood made up of fibrin and serum, but practically without corpuscles; so we speak also of sero-fibrinous pleurisy. Most of these cases are tuberculous, as we conclude from the tubercle formation we find in them on autopsy, the latent tubercular lesions, the tuberculin reaction, the fact that the exudate contains tubercle bacilli and the subsequent history of the case. The *etiology*: This affection appears more in men than in women, largely by reason of the more strenuous life of men, their exposures to cold and wet, intoxication and other predispositions. Bacteria are often found; such as the pneumococcus either in primary cases or secondary to some pneumonia focus in the lung; the staphylococcus (favorable cases); the streptococcus (very serious cases); and of course the tubercle bacillus. The typhoid bacillus, the Klebs-Laeffler, and the bacillus pneumoniæ (Friedländer), bacillus influenzæ, bacillus ærogenes capsulatus. The disease rather prevails in the fifth decade of life more than at any other time. The *pathology*: The pleural surfaces are covered with fibrin; and there is serum—as much sometimes as four quarts. This fluid is straw-colored, highly albuminous, clear or slightly turbid; containing fibrin, a few red and white blood cells and some pleural endo- or mesothelial cells. We may find also cholestrin, uric acid and sugar. The lung on the affected side is compressed and more or less airless; it may become carnified. In considerable effusions the heart will be displaced to the opposite side. In large right effusions the liver will be forced downward. With recovery the serum and most of the fibrin will be absorbed; granulation tissue will form, with adhesions and permanent thickening. The *symptoms*: Prodromes are not uncommon. The onset may be sudden, with chill, fever and severe lancinating pain (referred to the axila, the mammary region, or the abdomen or the back, and increased by deep respiration, cough or motion; or the onset is gradual, with slowly increasing dyspnoea, pallor, and accumulation of fluid. The temperature may reach 103°, dropping to normal at the end of a week or ten days; it may persist during several weeks; the temperature of the affected side is higher. The cough is dry; or the expectoration is slight, mucoid, possibly streaked with blood. There may be no cough. The dyspnoea increases with the effusion and the consequent compression of the lung tissue. The patient lies on the affected side. There is a leucocytosis—an increase in the white blood leucocytes, which are normally in the relation of 1-400 to 700 to the red blood corpuscles. Inoscopy and cytodiagnosis may evidence tubercular pleurisy. In considering the *physical signs* we must make a clinical division into (1) the stage of liquid effusion; and (2) that of absorption. (1) Inspiration: With a small amount of fluid there is no dilitation of the affected side; but with pronounced fluid the jerky movements of dry and plastic pleurisy disappear and there is no visible motion at the seat of the liquid accumulation. As the fluid increases so as to partly or completely fill the cavity the chest wall becomes immobile, the affected side becomes enlarged, the intercostal spaces tend to bulge. The cardiac impulse is visible in an abnormal position; in right sided pleurisy the apex beat is seen to the left; in left sided pleurisy to the right. Dyspnoea is obvious. On palpation the vocal fremitus is entirely absent over the effused area, and there is no friction fremitus. On percussion, when the patient is sitting or standing there is flatness from the base of the lung on the affected side to the level of the liquid; the line of flatness is apt to be S-shaped (Ellis), higher anteriorily. Above the line of fluid we get a tympanitic note or Skodaic resonance (vesiculo-tympanitic). On auscultation of breathing, the respiration is diminished or absent below the line of the fluid; above the level the intensity is exaggerated and the quality bronchial; the intensity over the healthy side is exaggerated. On auscultation of voice we find voice sounds absent below the fluid level; bronchophony or exaggerated intensity above. In mensuration we find the affected side enlarged both in its circumference and in its antero-posterior diameter, the false ribs being extended. We use a tape or the cyrtometer; by the latter we may determine the shape of the chest. Pleural friction sounds are lost below the level of the

liquid, and whenever the effusion prevents the contact of the pleural surfaces. Above the liquid they may be heard—if there is plastic exudate, or thickness and roughened pleura. (2) In the stage of absorption we find on inspection that the enlargement of the affected side is gradually diminishing, the intercostal spaces regaining their normal appearance; the respiratory movements of the affected side return, though restricted. On palpation the vocal and bronchial fremitus gradually returns; friction fremitus is apt to persist. In percussion the normal pulmonary resonance gradually returns from above downward; it may, in the inferior portion, never regain normal resonance, because of the great accumulation of solid, plastic, or calcareous, unabsorbed material or the condensation of lung tissue. On auscultation of breathing the respiratory sounds return, at first diminished and distant, then gradually more distinct and finally even rude in quality. On auscultation of voice we get at first bronchophony, then exaggerated, voice and finally return to the normal. On mensuration the affected side gradually decreases until it may be even smaller than the affected side. Pleural (creaking) sounds are heard as the effusion disappears and the surfaces again come in contact. The heart and viscera return to their normal or nearly normal positions. The X-rays are most useful in the detection of abnormal pleural conditions. Portions of the lung may remain impervious to air (atelectasis), when there is permanent loss of motion on the affected side, with persistent dulness on permission and no return of normal respiratory or vocal sounds. The upper part of the lung, in these circumstances, will be pervious to; then we get the tympanitic or skodiac note, exaggerated breathing and vocal resonance. The *course* of pleurisy with effusion: After ten days the fever subsides. Slight effusion may become absorbed; reaccumulation is likely after aspiration. When the fluid has reached the fourth rib, the time of recovery is prolonged; sometimes patients do not present themselves until the fluid has reached the clavicle. Rarely there is pulmonary fistula through ruptured pleura. The immediate prognosis is good; but we have to fear tuberculosis. There may be sudden death from thrombosis, embolism, œdema, regeneration of heart muscle or syncope by reason of a dislocated heart.

EMPYEMA.

The *etiology*: Infection may be from within, as in pneumonia, a septic focus, pus organisms, cancer, or tuberculosis; or from without, as in penetrating wound, fracture, or œsophageal disease. Empyema may be consequent upon serofibrinous pleurisy. We may find the bacillus of influenza, the strepto,—staphylo—or pneumococcus; apparently sterile purulent exudates are usually tuberculous. The *pathology*: The fluid is from turbid to thick pus in consistency; that in which the pneumococcus prevails is thick and creamy, of a sweetish odor. In gangrenous conditions the pus is fetid. The pleura is thickened. There may be sacculation. The costal pleura may show erosions involving even ribs and sternum; the visceral pleura may be perforated.

The *symptoms*: The invasion is sometimes abrupt; but usually it is insidious. There is pain; a dry cough (except when a pulmonary fistula terminates in a bronchus); dyspnœa; sepsis (pallor, weakness, sweating, rapid, feeble pulse, chill and irregular, hectic fever); there is marked leucocytosis. The *physical signs*: As in pleurisy with effusion. But a change in position is not generally followed by a change in the level of the liquid, by reason of its greater consistency and by reason of pockets formed by firm, fibrinous adhesions of the costal and pleural surfaces. Here, as in all pleuritic diseases, the X-ray gives most valuable information. We may get "pulsating empyema" if the sacculation has behind it a large vessel or if the pocket be in the region of the heart. There may be great and more localized distension of the chest walls, bulging of the interspaces, and displacement of heart and liver. We may find edema of the chest wall and dilation of the subcutaneous veins. The *courses*: If operation has not been done there may be spontaneous, natural cure by absorption, and deposition of the salts of lime. Or there may be a perforation into the lung with a fistula extending to a bronchus; recovery may follow such drainage; or there results pyo-pneumothorax. Or there may be pleural fistula through the chest wall, to the skin; or internally to some neighboring organ, as the œsophagus, the peritoneum, pericardium, down along the spine to the iliac fassa.

MINOR TYPES OF PLEURISY.

Hemorrhagic pleurisy occurs in tubercular pleurisy, cancer of the pleura, asthenic conditions, cirrhosis of the liver, chronic nephritis, malignant affections, injuries in aspiration, and hemorrhagic exudations; it occurs in effusion from rupture of new formed vessels or from pleurisy secondary to pulmonary disease.

Diphragmatic Pleurisy: Here there are no rales; the fluid is usually scanty; there may be empyema; there is pain, simulating that coming from the abdomen, and intensified along the path of the tenth rib; the respiration is thoracic and short; perhaps there is dyspnœa; possibly angenoid attacks. The patient suffers intensely, with but few objective symptoms.

Encysted pleurisy: Here the fluid is sacculated, in "pockets," shut in by adhesions; aspiration is essential to the diagnosis.

Interlobular pleurisy: The inflammation, or the fluid is between two lobes, sacculated by adhesions; the diagnosis is most difficult; perforation into a bronchus is likely.

The diagnosis of acute pleurisy: We bear in mind the sharp, localized pain and the friction rub in dry pleurisy; and the physical signs, the increase in size and the displacement of organs in pleurisy with effusion and empyema. The aspirating needle may be essential to the diagnosis; as also the X-rays.

In *lobar pneumonia* the onset is more severe, there is pronounced chill; the temperature is higher; the dyspnœa greater; there is expectoration of rusty sputum; the dulness is less marked, and may be higher behind than in axilla; the fremitus and voice are increased rather than diminished; bronchial breathing more likely and less distant: in *pleurisy* the dulness is of more wooden quality, of greater resistance; the fremitus is absent; the intercostal spaces are obliterated, the organs displaced. In *pericardial effusion* the dyspnœa is extreme, the apex beat is obscured or absent though not displaced, the heart sounds and pulse are feeble; the symptoms are out of all proportion to the extent of the effusion; there is normal resonance at the base of the lung; in left-sided *pleurisy* the apex beat would be displaced to the right; an encysted pleurisy may con-

fuse, if the area of dulness is situated anteriorly. In *pleurodynia* or *intercostal neuralgia* physical signs are absent. *Hydrothorax* is usually bilateral, painless, develops during cancer, or chronic cardiac, nephritic or hepatic disease. *Pneumothorax* is evidenced by succussion, metallic tinkle and amphoric breathing. *Abscess, hydated cysts or tumors of the liver* and cancer of the kidney, there may be a misleading convexity upward of the area of dulness with feeble breathing in the back; the aspirating needle will differentiate. In *subphrenic abscess* there is no cardiac displacement and the flow of pus through the needle does not intermit with inspiration. In *cancer* of the lung and pleura, and *hydatids* of the pleura, we differentiate by aspiration.

The *treatment* of acute pleurisy: In dry pleurisy we relieve the pain by an initial hypodermatic injection of morphine, grain ¼; to this end we give also Dover's powder, and codein, and we strap with long strips of zinc oxide adhesive plaster; or we apply ice bags; the Paquelin cautery has been used; leeches may be applied. We put the patient to bed, give a mercurial and saline purge, and diuretics as necessary; the diet is liquid. In pleurisy with effusion we apply mustard plasters, tr. iodine (fresh), and other counterirritants. Internally iodide of potash and the salicylates; we purge. The diet is to be dry (unless there is temperature), and salt free. If such measures have proved ineffective for fluid absorption, or in any case of effusion lasting beyond a few weeks, we aspirate, especially when the fluid has reached the clavicle, and when one side of the chest is completely filled; we thus prevent possible spontaneous evacuation of fluids, and subsequent contractures; if we do not aspirate when the operation is indicated we shall have to fear death by dyspnœa, or loss of absorpbing power, or subsequent phthisis, or progressive asthma. After giving a stimulant, such as whiskey or aromatic spirits of ammonia, we have the patient rest upon an assistant; the patient's hand, of his affected side, is placed upon his opposite shoulder. Under strict antisepsis the puncture is made below the angle of the scapula in the back, or in the axilla in the seventh or eighth intercostal space, close to the upper margin of the rib (so as not to wound the costal vessel); and we withdraw slowly a litre or more. A hypodermic of morphine may here be indicated. The symptoms and dangers attendant upon aspiration are: pain, coughing, pneumothorax, subcutaneous emphysema, faintness, convulsions and death from shock.

When the exploring needle gives us pus, we have of course empyema to deal with; we then exsect a rib and drain; if the patient is too weak we at least incise. This procedure is in the domain of surgery; and it is absolutely essential when the empyema has assumed unabsorbable proportions. Subsequently we do what we can to facilitate the distension of the lung on the affected side. By the James method the patient day after day, as his strength increases transfers by air-pressure water from one bottle to another. The bottles should have a gallon capacity; and by an arrangement of tubes the patient's expirations force the water from one bottle into the other. By the plan of Naunyn the patient sits in an armchair grasping strongly one of the rungs with the hand and forcibly compressing the sound side against the arm of the chair; then forcible inspiration is made by which the compressed lung is extended, since the sound side is fixed. The abscess cavity gradually closes partly by the contracture of the chest wall, and partly by the reexpanded lung.

CHRONIC PLEURISY.

This may be either dry (adhesive); or with effusion; it may be primary and quite insidious in its development; generally it is secondary to acute pleurisy. The *etiology* is as in acute pleurisy. The *pathology*: Chronic dry pleurisy is usually unilateral and at the base; tuberculous pleurisy, however, generally involves the apex; the pleural surfaces are thickened, covered with thick layers of fibrin and adherent; by the consequent contraction the chest wall is drawn in, the lung is compressed and perhaps carnified, and bronchiectatic cavities form. We may get pleural cysts; or there may be healing after perforation, with gradual absorption or discharge of the pus. After traumata such as gun shot wounds, the surrounding pleura is greatly thickened, and the adjacent lung tissue is compressed, airless and fibroid.

New connective tissue may extend from the pleura into the interlobular spaces. There may be calcification, especially after empyema. Chronic pleurisy with effusion is much as in the acute form; but the liquid may persist for months or years without becoming purulent; the pleura is much thickened and covered with fibrin and the fluid is often sacculated by adhesions.

The *symptoms*: Occasional exacerbations of acute pleurisy; dragging or sharp pain at the site of an adhesion; dyspnœa on exertion; progressive emaciation and loss of strength. May have vaso-motor symptoms, due probably to involvment of the first thoracic ganglion at the top of the pleural cavity (Osler)—dilatation of pupils, with flushing or sweating of one cheek.

The *physical signs*: There is diminished expansion of the affected side; later retraction of the chest if the adhesions contract; there is diminished fremitus; dulness; diminished breathing and voice sounds; absence of diaphragmatic excursion by Litten's sign. The heart may be drawn toward the affected side. The X-rays will shadow the affected area. The *diagnosis* is made by the history, the physical signs and the leathery resistance encountered in introducing the exploring needle. The *prognosis*: These sufferers tend to bronchitis, bronchiectasis, bronchopneumonia and tuberculosis.

Osler notes a *primitive dry pleurisy* which may directly follow acute plastic pleurisy. Friction sounds indicate this. There is adhesion of the pleural surfaces; or the organization of a thin layer of exudate in pneumonia will unite the two surfaces by delicate bands; theer may thus result great thickening of membranes and ultimately pulmonary cirrhosis. There is a primitive dry pleurisy of tuberculous origin: both pleurae are greatly thickened; there are firm, fibrous or caseous masses and small tubercles: there is reddish-gray fibroid tissue, sometimes thickened and infiltrated with serum.

The *treatment* of chronic pleurisy is hygienic, nutritional and symptomatic. The therapy is otherwise much as in acute pleurisy. We give iodide of potash, and the salicylates.

A Municipal Pharmacy has been started in St. Petersburg by reason, it is said, of the high rates at which medicines are sold by the private pharmacies and drug stores in that city.

BLOOD PRESSURE IN CLINICAL MEDICINE.*

BY LOUIS FAUGERES BISHOP, A. M., M. D.
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BY blood pressure in clinical medicine, we mean the amount of elastic pressure required to stop the pulse wave in the blood vessel. This does not, I believe, always corespond with the actual fluid pressure within the artery because the condition of the arterial wall has an influence upon the amount of force required to stop the pulse wave.

But in the main, the measurements obtained in this way are correct indications of the fluid pressure within the vessel, though in exceptional cases they certainly are not.

Blood pressure, as a symptom, is divided into three great classes: low blood pressure, high blood pressure, and secondary low blood pressure. I believe that is a valuable clinical division of blood pressure symptoms.

Low pressure is found in those cases in which there is a loss of tone in the blood vessels. It exists in a great many people with debilitating diseases and with depressing nervous diseases, and always exists in certain individuals.

Low pressure is of interest, but of not the same clinical importance as high blood pressure.

Very high blood pressure is found in cases where there is a demand on the part of the system for high blood pressure if the organs of circulation are able to keep up this pressure. Thus we find it in Bright's disease: a condition in which there is circulating in the blood certain materials that the kidneys ought to have thrown off and have not. And the body attempts by raising the blood pressure to keep up the activity of the kidneys that will satisfactorily eliminate the waste products.

This theory of the pressure of Bright's disease, that it is primarily a compensatory phenomena, an attempt of nature to make an organ do its work, is the one I have adopted.

In the same way high blood pressure is found where there is anaemia of the brain, and nature through the medulla attempts by raising the blood pressure to create a circulation of this anaemic brain.

Blood pressure is raised during digestion to supply a more active circulation in the stomach. It is raised when a person uses his brain to promote cerebration, and when anything is to be done, there is a rise in blood pressure. When this organic activity is obstructed by disease and is not carried on, nature attempts to bring about high blood pressure.

When high blood pressure has existed for a long time, the blood vessels are damaged, the heart is hypertrophied, and also the median coat of the vessels is hypertrophied, and high blood pressure becomes a chronic condition, and is out of proportion to the original need for it.

High blood pressure in distinction to valvular disease can be of purely nervous origin. It is very often found in insane people, in that form of insanity that is characterized by over-activity of the brain.

Last evening I had a patient who telephoned me earlier in the day and said she wanted to be bled. So, I said I would do as she wished, and I went last night and I took a quart of blood, (29 ounces, to be accurate), from her circulation. I did it without hesitation, because I knew the case very well, and I thought it was the proper thing to do.

The woman was the most typical case of high blood pressure of nervous origin that I ever saw. She has no kidney or heart trouble, but for a good many years she has been, if not unsound, at least unstable, in mind.

She has worried about everything. Her household is a source of worry to her; she seems always to be having painters or carpenters, and is upset from fall to spring. If a speck of dust is seen anywhere, she is in a condition of intense mental agony as a result of that trivial thing. She is under a condition of chronic mental tension.

Now that thing has gone on for a good many years and has caused a chronic over-activity of the muscular coat of the blood vessels, corresponding to what is seen in certain cases of insanity, and has actually led to a condition of high blood pressure with more or less damage to the arteries and hypertrophy of the heart, that makes it necessary once in a while to take away some of her blood.

The case is purely of nervous origin. Her blood pressure is 200, sometimes over. She has a great many disagreeable symptoms. She has a sense of fullness in the neck and in the vessels of her head. Her face is very red, and her pulse is hard and racing, and her blood count is high. Her kidneys show a little albumen and a few casts, but nothing important. Her mental condition is as I described it, one of intense mental agony.

She has been to many physicians of importance. She drifted into my hands when my turn came because she is never comfortable. She conceived the idea herself that if she could get rid of some of her blood, she would be more comfortable.

Some years ago I was trying to relieve her, and I took her blood, and it gave her relief. And now about every six months I take a quart of blood, and then she is comfortable for about three to six months, and then we have to do another phlebotomy.

I quote the case as illustrating a type of high blood pressure that is of great importance, and that is, high blood pressure that has its origin in mental conditions.

The theory of high blood pressure as a compensatory measure seems to me to stand very well, but this is an exception.

The great lesson is, that high blood pressure up to a certain point must not be interfered with. So long as you believe that high blood pressure is nature's attempt to create the necessary circulation in any part of the body, and so long as you believe that this pressure is not actually dangerous, you had better not interfere with it.

I found when I was in Vienna, that in the principal wards where they treated heart disease, they had given up the use of nitroglycerine, except as an emergency remedy. They never give nitrites to lower blood pressure. They gave them in pain or shortness of breath. But they were not used at all as they are used in America—to lower blood pressure, and I believe they are right about it.

*Report of a lecture in the wards of the Lincoln Hospital.

The third classification of blood pressure is secondary low blood pressure.

This is found where a very high blood pressure has been maintained for a long time, and the heart or the tone of the blood vessels has failed, and the heart and blood vessels are no longer able to keep up the blood pressure. This is a very common phenomena in clinical medicine.

It marks the onset of dilatation of the heart in chronic heart disease. It marks the general failure of strength in any of these conditions that have been characterized by high blood pressure. This is a case where the blood pressure may be only relatively low.

What I mean is this: I have perhaps a dozen patients whose blood pressure averages 200. They have been higher, as high as 240. Under hygienic treatment and good management, they have come down to about 190. Now that pressure is what was needed to carry on properly their organic activity.

When a case like this shows weakness and dilatation of the heart, and the heart is no longer able to maintain a blood pressure of 190, and falls to 160, that patient is suffering from low blood pressure, while to you and me it would be a high blood pressure.

Another point is this: that these cases often give a high reading on account of spasm of the blood vessels when the actual pressure within the blood vessels is probably much lower. A dilated heart is often accompanied by contracted blood vessels for the heart is not strong enough to carry on the circulation.

In the case of heart disease in a young person, we got a low blood pressure reading up to the point where the spasm of the blood vessels was set up, then we would get a high blood pressure, while all the time the patient was suffering from insufficient pressure to circulate the blood.

The ordinary method of measuring blood pressure is to put elastic pressure up to the point where the pulse wave no longer passes. That can be done in several ways. Ordinarily, it is done by the elastic compression of air, and the air compression is measured by a mercury thermometer.

My own apparatus consists of a rubber bag that is laced over the artery, and that rubber bag is connected by a tube to another rubber bag, and the whole combination is filled with fluid that is twice as heavy as water.

When the cuff is laced over the artery, the upper bag is elevated, and the fluid flows down from the upper bag into the arm bag and makes pressure, and that pressure, from the law of hydrostatics, depends upon the height of the source. I can raise the pressure in this bag at will, by raising this upper bag. I take the patient's pulse in my hand, and gradually raise the bag till the pulse is lost at the wrist.

This boy is a very hard case to measure because some of the pulse waves come through and some don't. But the point where almost all the pulse waves are lost seems to be about 90 millimeters of mercury.

This boy is an example of primary low arterial tension in a case of valvular disease.

54 West 55th Street.

THE DIAGNOSIS OF GASTRIC ULCER.*

BY W. CARL SCHOENIJAHN, M.D.
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WITH the establishment of the etiology of gastric ulcer will, no doubt, come greater ease in its diagnosis. The results of autopsy show, according to Brinton, that about 5 per cent. of all persons have or have had ulcer of the stomach. If we accept this conclusion, it is evident that many cases remain undiagnosed, or present such uncharacteristic symptoms as to lead to other diagnoses.

The condition is almost exclusively one of middle or advanced age, being extremely rare under the age of ten, and most common between the ages of twenty and forty. It is established that the disease is most frequent in females in about the proportion of two to one.

The cardinal symptoms of gastric ulcer, as given in our text-books, are pain, tenderness of the epigastrium, vomiting, hemorrhage, usually constipation and a resulting cachexia.

At the beginning of the disturbance we have frequently no more complaint than of some uneasiness or slight pain in the epigastric region. Pain is the most constant and characteristic of all the symptoms, and the one, as a rule, which brings our patient to us. After the development of the ulcer, the pain assumes a burning, gnawing character. The important diagnostic feature of this symptom is the time of its onset, which is usually quite soon after the ingestion of food, though the quality of the meal also has its influence. The coarser foodstuffs, as a rule, cause pain to appear promptly, even two minutes after deglutition, while milk and bland foods sometimes fail to bring it on. Usually the pain remains until the end of gastric digestion, when it gradually lessens and even disappears. It is referable to two causes: the irritation of food during the mechanical activity of the stomach, and the more or less caustic action of the gastric juice. If vomiting occurs, the pain usually ceases with the emptying of the stomach. The portion of the epigastric region, to which pain is referred, is rarely more than two inches in diameter, and is, as a rule, directly below the free end of the sternum. Dorsal pain, referred to the left of the spine at about the eighth or ninth dorsal vertebra, is a fairly common symptom. Its location, when it exists, is generally constant, and its worst attacks usually alternate with those of the epigastric pain. This dorsal pain appears later by weeks or months than the epigastric pain. One of the most important points in diagnosis is the increase of the epigastric pain on pressure. A few cases, however, do not exhibit this symptom. Brinton cautions against carelessness in applying the pressure test, and claims we should strictly prohibit the patient himself from all manipulations of the epigastric region. Leube emphasizes the fact that the intensity of the pain depends in a very large number of cases upon the posture of the patient; thus, for instance, appears constantly only when the patient is in the right lateral position. This fact, he states, has aided him in many doubtful cases. The cause of the increase of pain is mechanical.

Vomiting is usually absent during the early period of the disease, but is a fairly constant symptom at a later stage. Most frequently the vomiting occurs an hour or

* Read before the Long Island Medical Society March 2, 1909.

two after meals, or at the time the pain is at its height. In some cases, the vomiting follows each meal, in others, it happens much more seldom. The regurgitation of excessively acid chyme or spells of nausea may take the place of vomiting.

Hemorrhage, where it occurs, is a most important diagnostic point in gastric ulcer. As the existence of ulceration necessarily implies an exposure of underlying bloodvessels, small hemorrhages are probably of very common occurrence. Many are overlooked, as the loss of blood is too small to attract attention. When a large vessel is eroded, we have occasionally an appalling disaster facing us. If present, hematemesis virtually establishes your diagnosis.

The appetite would in most cases remain unimpaired, in fact, many cases complain of constant hunger, but fear of pain deters these sufferers from eating, and they frequently take so little food as to lose flesh and strength rapidly. Most cases are accompanied by constipation, which Leube explains by assuming an impairment of the peristaltic action of the stomach. The bowels, because of the reflex association of the peristaltic waves, partake of this sluggishness, and intestinal action is feeble and delayed.

The cachexia that exists is the result of severe pain, partial starvation and anemia.

When all or a number of the cardinal symptoms exist in a given case, we will frequently find no doubt in our minds regarding the diagnosis, but there are without doubt cases of latent ulcer, where the determination of the condition must be speculative. The special diagnostic aid at our command lies with the examination of the gastric contents. Long ago Riegle, Jaworski and others established the existence of hyperacidity in gastric ulcer. Though not an invariable concomitant, the majority of cases exhibit this hyperchlorhydria. Many show an increase to the extent of three or four times the normal acidity. But hyperchlorhydria may exist without ulcer of the stomach. The microscope or chemistry may show the presence of blood in the vomitus or test-meal. F. C. Wood says briefly: "The diagnosis of ulcer of the stomach depends chiefly upon the clinical symptoms of the disease and not upon the examination of the stomach contents. The presence of blood in the washings and the high figures obtained for free acid may be suggestive, but, as a rule, it is wiser not to pass a tube in the case of suspected ulcer." Leube also cautions against the use of the stomach tube. In some exceptional cases, in which the diagnosis must be made by such means, the use of the tube in trained hands is condoned.

In approaching the question of clinical diagnosis, we may assume that under any of the following conditions a diagnosis is quite justifiable:

Where hematemesis is large and cancer can be excluded.

Where pain appears in the characteristic areas shortly after eating, and with fair regularity, lasting for some hours and disappearing with the emptying of the stomach, particularly if this pain is increased on gentlest pressure, and where a tenderness exists in these localities between the intervals of pain.

Where vomiting appears fairly regularly shortly after eating, we should at least suspect ulcer, particularly in a young person who has recently become anemic. And, if a high degree of acidity is also present, our suspicion may be advanced to a probability.

The chief conditions that present symptoms similar to those of the disease under consideration are nervous gastralgia, functional hyperchlorhydria and cancer.

From gastralgia gastric ulcer is differentiated by the following points: The pain in gastralgia is not dependent on meals, and is frequently relieved by pressure. There are often long periods of intermission between attacks. There is no bleeding in gastralgia, and frequently other neuralgic pains are present in the subject. Tenderness during the interval between attacks does not exist in gastralgia.

Functional hyperchlorhydria differs in the fact that vomiting is not a regular symptom, though in some cases it occurs. The pain in hyperchlorhydria appears from one to three hours after eating, and is relieved by more food, particularly of the proteid type, or by large doses of an antacid. Pressure has no influence on the pain. No blood is vomited.

In cancer the pain is usually not violent, but fairly continuous. The hemorrhage in cancer is usually small, and the blood is generally rejected in the changed condition of hematin, spoken of as coffee-grounds. Vomiting in cancer is likely to occur once a day, or once in two or three days, when a large amount of sour and offensive matter is expelled. The absence or marked diminution of free hydrochloric acid in the vomitus, associated with the presence of lactic acid, is a common condition in cancer. Quoting Leube: "Entire absence of free hydrochloric acid has, to my knowledge, never been observed in a case of ulcer of the stomach." Vomiting does not relieve the pain. The age of the patient may be of significance, cancer being exceedingly rare under thirty. The tongue in cancer is usually heavily coated, while in gastric ulcer it is most often red and dry. The peculiarly fetid character of the belching and vomitus in cancer is not found in ulcer. The possibly palpable tumor, the sallow, yellowish complexion, dry skin, and cachexia of cancer are wanting in gastric ulcer, in which condition the complexion usually remains fresh, though often markedly anemic.

A number of diagnostic suggestions are presented by various authors. It would, for instance, be impossible to differentiate the hematemesis of gastric ulcer from that of early hepatic cirrhosis, except by the absence or presence of other symptoms. Such rare conditions as hematemesis in hysteria, cardiac disease, vicarious menstruation, varices and scurvy are also mentioned for differentiation. It is likewise observed that the pain of gall-bladder involvement may confuse at times, but here the pain and tenderness are more apt to be further to the right, hemorrhage is absent, there are often fever and subsequently jaundice. The employment of orthoform is suggested as an aid in differential diagnosis, as it is stated that this drug markedly relieves the pain of ulcer, but has no influence whatever on pain from other causes.

Recently W. J. Mayo wrote that three-fifths of all gastric and duodenal ulcers are situated in the duodenum, and that many duodenal ulcers are classed diagnostically as gastric. Round ulcer of the duodenum usually affords symptoms similar to those of gastric ulcer, except that hematemesis is much less common, the blood in case of hemorrhage passing off in the movements. The location of the pain and tenderness is further to the right in duodenal ulcer, usually, accord-

ing to Reed, in the prolonged right parasternal line, about one or two finger-breadths below the gall-bladder. The pain of duodenal ulcer rarely comes on until two hours after eating. Vomiting may occur as a reflex symptom due to pain, but does not, as a rule, promptly relieve the distress. The excess of hydrochloric acid, so characteristic of stomach ulcer, is not nearly so constant in duodenal ulcer, and there may even be a diminution in its quantity. According to Collin, 79 per cent. of cases of duodenal ulcer occur in men and one-seventh of all the cases are in children under ten. If this statement is only relatively true, it is no compliment to the diagnostic acumen of the general practician, and shows the need for more careful observation of details on our part.

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ECTOPIC GESTATION. (1)

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WE have in medicine periodic themes of popularity very similar in cause and effect to those arising in many other professions or vocations. Just now the one most prominent in the discussions of medical societies is ectopic gestation.

Heretofore, for the last few years, the appendix has held sway to such a degree that we now find that not only the medical man, but the layman as well, is quite conversant with the subject. So much so that we as physicians and surgeons have lost our laurels as being the sole and exclusive possessors of the key to the secret crypt of appendiceal acumen and wisdom. No longer are we called upon to tell what's the matter with the patient the victim of appendicitis, nor hardly even to devise the method of treatment, for very often these have already been decided upon. Has it not happened to all of us that that nerve-harassing wizard of space, the telephone, would summon us, and on responding, find a voice at the other end instruct us: "Hurry up, doctor, we have a case of appendicitis up here." And on arriving, would be asked by the whole family, "Shall we freeze it or operate it?"

So it is not hard to imagine, with persevering education, that ectopic gestation will be as easily confronted.

For a condition of this kind we can have no regrets, because a thorough and close familiarity with any subject surgical, for either layman or physician, means a proportionate saving of human life, a more thorough appreciation of the art and science of medicine and surgery by us all, and less fol-de-rol with Christian Science and Emanuel movements.

As we are enabled by investigation, unfolding and clearing up the various subjects of our profession, and placing them on bases of absolute fact rather than on theory, just to that extent will we be able to kill off any cult or schism.

And this is as it should be, for, however much these fanciful "movements" may be able at present to do for negative neuroses and other maladies which to date we are unable to properly comprehend, because we do not know either their pathology or etiology, we defy any of them to nullify a perforated appendix or a ruptured ectopic.

It is going to be a tremendous help when the layman becomes sufficiently educated to know, for then we will have to quit magician tactics and approach our patient with that sincerity and honesty of purpose that will leave no ground for uncomplimentary criticism.

There is probably no other subject in the realm of medicine so absorbingly interesting as the study of the etiology of extra-uterine pregnancy. It is true that even to-day amid all the varied reasons assigned as cause, we still have nothing but theory, at any rate nothing that would seem any more than remotely problematical. Many an ingenious explanation has been given by men of the widest experience, and some accepted by our profession as veritable facts, for considerable periods, only to be blasted and refuted by other minds fully as fertile. For instance, Lawson Tait for a number of years led us to believe that the direction of the ciliary current in connection with salpingitis was the most pronounced cause. Then came along Hofmeier and Madl and proved to us that the cilia work in the same direction in both tube and uterine cavity, that is all downward; whereas Tait had told us that the direction was downward in the tube and upward in the uterus. J. B. Williams at one time thought he found tubal diverticula into which an ovum might become implanted, but he himself soon discarded this idea. The trouble is, we can never know the pathological side of pregnancy until we know the histological, or the process and method of normal fecundation. As it is we do not even know exactly in what portion of the uterine or tubal canal the spermatozoa are supposed normally to first come in contact with the ovum. Some maintain it is in the uterus, and others in the tube.

However, we cannot feel so pessimistic as to abandon all hope and endeavor to ever understand the mysteries incident to the starting and formation of a fœtus. We take courage in the fact that it is not so very long ago when we first learned that there were such things as ova in the human female, and still less of time since the discovery of spermatazoa, and without question experimental study will enable us sooner or later to fully understand the whole subject. For the present we must be content to rely on the deductions from observations that many men have made in relation to ectopic gestation.

At the outset it is very much to be regretted that it is exceedingly difficult to obtain from our patients histories of any great value as bearing on this subject, sometimes from pardonable ignorance and more times from unpardonable falsehood, for the existensce of previous disease or infection has a very strong influence on the causation of our subject.

Naturally more married women are sufferers from this malady than single ones, but surely it does not require the wisdom of a Solomon to know why this should be so, for we certainly would not expect it to be otherwise, but married or single, we often find ectopic gestation to take place at the very first pregnancy, and we have seen it a number of times in single women in whom presumably there had not been any previous impregnation, and so in whom there could not have been an infection due to abortion or parturition. And yet with all the uncertainty and obscurity existing in this

(1) Read before the Lenox Medical and Surgical Society, Jan. 23rd, 1909.

subject, we find opinion as to its cause so overwhelmingly in favor of previously existing inflammatory disease that we must accept this as *the* factor; and inasmuch as the fallopian tube is the portion of the anatomy that concerns us here, it resolves itself down to salpingitis as the cause. Then comes the delicate and interesting point: what is the cause of the salpingitis, that victimizes women into being subjects of ectopic gestation? Here again we are unable to furnish any direct proof to back up an assertion, but we are privileged to resort to circumstantial evidence.

We believe that case for case it can hardly be denied that there is more septic infection in the country districts than there is in the city, that is the septic infection we are familiar with as following labor or abortion. If such is the case, from the resulting salpingitis we might expect the larger percentage of ectopics to occur in country sections. But what do we find? Last year the Mayos performed 3,215 laparotomies; of these 27 were ectopics; that is less than one in a hundred. It must be remembered that the larger proportion of these cases are from the farming districts of Minnesota and the contiguous States.

At Lebanon Hospital, among 941 laparotomies, there were 36 ectopics.

Ahlfeld, whose patients also come largely from country sections, seldom has occasion to operate for this trouble. And so if we were able to continue our search we believe that it would show that ectopic gestations are more prevalent in the more thickly populated centres. This cannot be attributed to the difference in the mode of living, but to the one thing we always find mostly disseminated in congested centres, and that is gonorrhoea. Men who have gone carefully into the history of their patients give anywhere from 50 per cent. to 100 per cent. as having had this disease.

One might naturally ask if we are going to give population and gonorrhoea as the cause, what about London and other old time thick centres? The trouble is, we have been able to study this subject for only about twenty-five years, and we know but little what happened to these cases previously; no doubt many got well and many died. Possibly the gonococcus may not have been as active. It is surely active enough now if we are to believe our genito-urinary friends that ninety-five per cent. of our males have, at some time or other, carried it around with them. Of course, it is hardly fair to forget that originally they got it somewhere. Again, it may be asked, why should this bacillus rather than streptococcus or other form of infection, be given the credit for paving the way for extra uterine pregnancy; because the gonocuccus has a peculiar predilection for the mucous surfaces of the genital tract; they are his affinity; the others exhibit no preference. They attack the tissues wholus bolus; hence the lumen of a tube the seat of the former may not be destroyed, but only enough of the epithelium to interfere with the normal function, and thus become a suitable place for the lodgment of an ovum there to be fertilized.

We have no desire here to go into the detail of symptoms; they are too familiar to everyone; but we would like to refer to one element and that is haemoglobin percentage in cases of rupture. It has been stated that it is of no value as indicating internal hemorrhage if found to be normal, and to substantiate this the results of experimental bleeding on animals was given, tending to show that the loss of blood did not materially reduce the haemoglobin. We are fully aware that a patient may have a low percentage by no means due to loss of blood either internally or externally, but these are cases of long standing illness, and we admit that in such, a low haemoglobin is of no particular significance except to show a general condition markedly below normal. But blood letting of animals and intra-abdominal bleeding of a woman have comparatively nothing in common.

Furthermore, we believe that if an animal is bled almost to exsanguination quickly, if allowed to remain long enough to get the full effect of the loss on his nervous system, and then examined, we will find his haemoglobin to be reduced, for the fluids of the tissues will by that time have found their way into the blood current, and thus reduce the relative number of red corpuscles.

Again, the two have nothing in common because in intra-abdominal bleeding there is the added peritoneal irritation and shock as a result of it, for we must remember that given two patients exactly similar, and both lose the same amount of blood in the same length of time, but the one is from the uterus externally and the other from the tube internally, the latter will be by all odds in the most precarious condition. We must ever realize in all surgical work that the peritoneum is an exceedingly delicate and important structure, whether parietal or visceral, and responds most keenly to any trauma.

When it comes to treatment, there has been so much said and written about it that one feels like tendering an apology for even mentioning it. But the goal of surgery is to obtain that one hundred per cent. of cures, and though the object be as ephemeral as Jason's chase after the Golden Fleece, nevertheless duty demands that we strive for it. Even now the death rate is so small that we do not approach our blanched and pitiful patient with the same trepidation and misgivings we did but a few years ago. Still we do lose them. Sometimes they seem to glide away from us like spirits into mist, and give us no opportunity of even using the knife. At other times the knife helps them along. In short, they die if we do operate, they die if we don't operate; they die if we wait, they die if we hasten.

There are three opinions usually expressed, some advocating immediate operation, others who prefer to postpone, relying on the patient's recuperative powers to bring a more favorable condition, and still some others who at times at least would not operate at all. We can readily understand the attitude of the first and the second, but hardly the last.

We are perfectly willing to admit that a patient with a ruptured tubal pregnancy may recover without operation, and they sometimes do, but that process is a hazardous one, and even where recovery does take place the convalescence is necessarily slow and tedious. We have seen them in bed for weeks, and then had to operate. The tax for the absorption of so much material in the abdominal cavity is too much for any patient, and it makes her an invalid too long.

What, then, is our standpoint?

That every woman with an unruptured extra uterine pregnancy should be immediately operated upon.

That if ruptured it may be left to the discretion of her surgeon whether he will operate now or later.

That at any rate, every patient should be operated on just as soon as she has rallied sufficiently to permit of doing so.

That every woman the victim of such bleeding should have the services of a good nurse, and preferably those of a competent physician constantly at her side to take notice of danger signals should they arise. These women should never be left for a moment. And lastly, that we should endorse what has been facetiously but tersely said: "I stand over the patient with my jack knife in my hand."

185 East Seventy-first street.

Cardiac and Vascular Complications in Pneumonia.—Dr. F. Forchheimer (J. A. M. A., October 30, 1909) says that if we glance at the etiologic conceptions which formerly existed in connection with lobar pneumonia, it will not be difficult to see why the heart was neglected. It was not until 1874, when von Jürgensen wrote his remarkable article, in which he says, "Sine pulsa nulla therapia," that the heart was brought into prominence. Ten years later Fraenkel discovered the pneumococcus, and our knowledge of the disease increased. For the study of blood pressure conditions the most important is found in Romberg and Passler's contribution on the effect of pneumonia infection on the general circulation. They showed that the toxic albuminoid which is produced during metabolic activity of the pneumococcus paralyzes the vasomotor centre in the medulla oblongata. The splanchnic nerve is the vasomotor nerve of the intestine, and the paralysis of its centre causes dilatation of blood vessels in the splanchnic area, the blood pressure sinks, the heart draws blood from other organs, "bleeding itself into the splanchnic area," and finally stops. With a healthy heart, vasomotor paralysis is the most common cause of death in pneumonia. The symptoms of this condition are: rapidity of heart and sinking of blood-pressure, tympanites, exsanguinated appearance of the patient, collapse, symptoms of cerebral anemia, stupor, coma, and death.

Caffein has been found most serviceable, in doses of gr.iss to v prophylactically, and when symptoms of "bleeding into the splanchnic area" have developed it should be given hypodermically 0.20 gm three or four times daily. Other preventive measures should be considered, such as the fresh-air treatment, the relief of sleeplessness, and the reduction of temperature may become necessary. When the symptom complex has developed, adrenalin is employed for the purpose of contracting the vessels of the splanchnic area. It may be given with hypodermoclysis 1 c.c of a 1000 solution, the frequency to depend on symptoms.

Dilatation of the right heart is a rare occurrence, and the clinical picture is typical. There are cyanosis, dyspnea, increased activity of all the respiratory muscles. The jugular veins are filled, the movements of the heart are increased, and on percussion there is increased heart dullness to the right. The simplest treatment is blood letting, but is not always required.

The other cardiac conditions which may develop in the healthy heart are pericarditis, acute myocarditis and endocarditis. Endocarditis is the most frequent complication, and the third most common cause for pericarditis in the pneumococcus. In regard to acute myocarditis in pneumonia our knowledge is fragmentary, but it seems that it is the post febrile form, and as such leads to sudden death from acute myocardial insufficiency.

The Treatment of Diabetes Mellitus.—Dr. J. Rudisch (J. A. M. A., October 23, 1909) reports three cases in juveniles which were successfully treated under the following heading. (I) The administration of fats. (II.) The presence of acetone bodies in the urine, and their relation to strict protein diet. (III.) The quantitative limitation of the proteins and fats. (IV.) The administration of drugs.

Instead of the large quantities of fat as recommended by most authorities, Dr. Rudisch has found that the patients do better on small quantities. The sugar eventually disappears, and the patients gain in weight. Olive oil is the best form to administer fats in gradually increasing doses, commencing at one teaspoonful after each meal.

The dictum that on the appearance of acetone and diacetic acid in large quantities in the urine, the physician must add carbohydrates to the diet to ward off the onset of coma, must not be applied indiscriminately. When a person is suddenly deprived of all carbohydrate food, acetone bodies in larger quantities usually appear in the urine, but this will gradually disappear even if he is kept on the strictly proteid diet. However, in patients who have been deprived of all carbohydrate food for a long time, should there be an appearance of acidosis, small quantities of carbohydrates must be added to the diet.

The rule in feeding these patients is to give them as much of the prescribed food as they demand, admonishing them, however, that it is better for them to eat little. The first case, in the early part of the treatment, was given a diet equivalent to 80 calories per kilo of body weight. This was gradually reduced to about 30 calories per kilo, when he showed marked improvement, gaining in weight. The other two cases did well, lost their glycosuria and gained in weight on diet averaging less than 25 calories per kilo of body weight.

The drugs of principal value are sodium bicarbonate, opium and atropine. Sodium bicarbonate is usually limited to the control of acidosis, but also exerts a distinct inhibitive effect on the excretion of sugar.

Opium is especially valuable in those cases exhibiting a neurotic element. The author has found atropin to be the most valuable. It may be administered in the form of the sulphate or the methyl bromid, up to the point of tolerance in gradually increasing doses. When toxic effects are noted the dose is not increased further, or the drug is stopped entirely. When, with the cautious increase in carbohydrates in patients whose urine has become sugar free, sugar again appears, it is often possible to suppress the sugar excretion solely by atropin without reducing the carbohydrates. In other words, the carbohydrate tolerance is greater with atropin than without.

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MUNICIPAL HOSPITALS FOR CONTAGIOUS DISEASES.

THE old term, pest house, undoubtedly dating back to the middle ages when bubonic plague made occasional visits to European cities, was for a few generations, practically synonymous with "small pox hospital." Up to a very few years ago, the pest house remained as a small, usually deserted building, at intervals employed, in spite of its lack of modern sanitary requirements, for the relatively small number of variola cases that could develop in any civilized community in which vaccination has been in fairly general vogue for years. Quite recently, the professional and municipal conscience has awakened to the fact that provision must be made for the care of the acute, actively contagious diseases for which medical science has, thus far, discovered no prophylaxis save quarantine.

With this awakening has come the reflection that small pox, however dangerous when developed, is a disease which threatens mainly the foolish, careless or fanatic members of society who neglect or oppose vaccination. Barring the very occasional case of a very young infant not yet vaccinated, or of a person for whom the immunity of vaccinia—which is virtually a dwarfed variola—has failed, there is little need of quarantining against small pox. It is well that we do so for the sake of these exceptional cases, but it is straining at a gnat after swallowing the camel of needless disease and death from the hundred or thousand fold more prevalent infections of which popular opinion stands in less dread.

The moment that we begin to consider seriously the need of isolating and caring for the great mass of actively contagious diseases, the availability of the old pest house momentarily suggests itself, but is dismissed on account of its absolute inadequacy. Whether or not the special small pox hospital shall be preserved or whether it shall be retained for the care of rare and exceedingly virulent cases as of anthrax, hydrophobia, etc., as well as small pox, need not be discussed here, except to point out that if it is worth while to keep the old pest house at all, it should be brought up to present standards of sanitation.

Theoretically, it would be best to have a special hospital, for each community, for each infectious disease. Practically, this ideal can not be hoped for, except in a few instances in which we can count on a fairly constant population of patients requiring special methods of treatment as well as isolation. Furthermore, the degree of contagiousness must be considered as an important criterion. It scarcely needs an extended argument that tuberculosis, pneumonia, malaria, venereal diseases, septic fever and various infections of the alimentary canal, such as cholera nostras and dysenteries, or even typhoid fever, have no place in the hospital under discussion. Typhus, relapsing fever, sleeping sickness and various other diseases practically unknown in our country should scarcely be reckoned on for such a hospital, unless in an emergency. Rare but more or less endemic infections of high mortality, such as tetanus, anthrax, hydrophobia, intracellularis meningitis, etc., would also be emergency problems, to be consigned to the "pest house," the new hospital for contagious diseases or to a properly isolated part of a general hospital, according to circumstances.

Of the prevalent infections, it is usually regarded as impossible to quarantine against influenza and unnecessary to do so against German measles, on account of its very mild nature. This leaves for practical consideration, scarlet fever, measles, whooping cough, diphtheria, and perhaps erysipelas.

With the exception of the last, and to a less degree of diphtheria, these are mainly diseases of children. But it should be remembered that small pox was a children's disease until controlled by vaccination and that any semel incident, prevalent infection must necessarily be so unless there should be some special protective factor in immature tissues. Consequently, the equipment and management of the hospital must be planned mainly for the care of children.

A point of the utmost importance is the probable population of such a hospital and the maximum population to be expected at any one time, on the basis of the present and future total population of the community. Obviously, anything like an accurate prediction is impossible. For most small towns and a few large cities, like Albany, the immediate future holds out no hope of any considerable increase in total population. For very large cities, the growth may be best provided for by establishing new hospitals so that in these cases, hospitals may be planned as for a fixed population. Otherwise, allowance at least of land for building extensions, should be made according to the rate of increase of each muni-

cipality or other community.

Up to the age of 20, the number of children of any given age by years does not vary much from 2 per cent. of the total population. Thus, for a community of 100,000, providing that every child had any given semelincident infection and that such a disease occurred to the same extent each year, we should expect 2,000 cases of the disease. Statistics as to the actual occurrence of or escape from these diseases are very unreliable, as is well known to physicians in the habit of noting exact personal histories of their patients. Statistics of actual gross incidence show a much smaller liability to these diseases but such statistics are also very inaccurate, owing to the neglect of parents to summon medical aid for what are considered trivial cases and to the temptation to avoid quarantine restrictions.

The deduction from averages of infectious cases reported by years, affords some idea of the demands liable to be made upon a hospital, but a definite policy must be established, at least as a desideratum, whether all cases should be treated in a hospital, and whether, if not, the desires and ability of parents to care for children in their homes should be exclusively consulted, or whether the dominent idea should be the maintenance of a rigorous quarantine. The density of population, the average wealth and its distribution, as well as many sanitary details all differing materially for different communities, must be considered carefully after outlining the general policy.

Thus it is obvious that the problem is very different according as we consider the metropolis and a very few other American cities densely populated and with relatively large slum populations, or the larger group of cities of 100,000 to 500,000 population, or communities smaller, less dense and with more equable distribution of wealth.

In a city of 400,000, fairly typic of the cities in which the problem of a hospital for contagious diseases is most imminent, the incidence of scarlet fever for 1908 was 2,265, for the year from July 1, 1908, to June 30, 1909, it was 3,561. The variation for measles was even more marked—1,919 to 447. By months, the potential demand upon a hospital fell from 427 for March to 13 for September, for measles. However, the total potential demand for the group of acute contagious diseases was less variable, the limits by months for 1908 being 396 and 602.

It is scarcely necessary to state, however, that at any time, an epidemic of enormous proportions is liable to develop, especially after a period of relative immunity for several years has furnished an abundance of susceptible material. Such an epidemic is especially liable to exceed the averages for small communities.

There is, therefore, a very practical demand for elasticity on the part of the hospital. While it has been abundantly proved by unpleasant clinical experience that one acute exanthem does not preclude the joint or successive incidence of another exanthem or of diphtheria, etc., it seems to be established that, with reasonable precautions with regard to seggregation of patients and nurses, division of medical service and disinfection, no great danger of mutual infection depends upon the use of the same building for various diseases. Thus, while allowance should be made so that under no conditions should the same ward be used for the treatment of different diseases, a hospital divided into wards of a few beds each, may be planned. In accordance with a liberal estimate of the total monthly incidence of the various diseases included in its purpose, due care should be exercised for the fairly complete isolation of the elastic units of such a hospital, including the apartments of medical, nursing and other attendants, so that not only the patients, but the attendants upon patients with a given disease may be isolated from those liable to carry a distinct infection. Even the air supply should be separate and, indeed, ventilation should be by means of filtration or siphonage through antiseptic solutions. Analogous precautions as to sewage, food, waste, etc., should be taken. Under ordinary conditions, a large proportion of the available space would be unoccupied so that abundance of time would be provided for the disinfection and renovation of individual wards. The pavilion plan would naturally suggest itself and, while the construction should be fire-proof, it should be fairly cheap to provide for the destruction and remodeling of parts of the hospital, as required by medical and architectural advancement.

At the risk of seeming too optimistic, it is not too improbable for serious consideration, that we may at any time discover a prophylactic for any of the acute contagious diseases analogous in efficacy to vaccination against small pox or, at least, that improvement in diphtheria antitoxin and the development of analogous means against other diseases may so far shorten the duration of treatment and quarantine, as to greatly increase the monthly capacity of the hospital. Even without signal improvements of this kind, it is not unreasonable to hope that the very object of the hospital, in addition to the direct benefit to the individual patient, may greatly reduce the general incidence of these diseases.

SLEEP.

SLEEP has always been a puzzle and an invitation to theorists. Death, to which it has often been compared, is, in a sense, easier to comprehend; for the latter is one and absolute, whereas sleep has different degrees and perhaps different kinds. What

follows death, so far as the soul is concerned, is not known to science, though theology and philosophy have given us assurances of a more or less dogmatic nature; and this fact simplifies at least the understanding of it. From the scientific viewpoint one can only consider the physical side of death; whereas of sleep both aspects command attention, and require two orders of explanation—the psychological and the physiological. And upon such two-fold basis many theories have been evolved—each one, perhaps, partly true, none wholly so, to the exclusion of the others.

Among the theories which Dr. Boris Sidis discusses in his book, *An Experimental study of Sleep*,* he altogether rejects that which explains sleep by changes in the circulation of the blood in the brain (advanced by Haller and Hartley); that of Dr. Fleury, who ascribes sleep to cerebral anemia; that on the other hand, of Brown, Czerny and Broadman, who ascribed it to cerebral hyperemia; that of the chemistry of the cell (as by the relatively smaller absorption of oxygen into the tissues during the night); the theory of Preyer and others that sleep is an illness, a self-poisoning of the system by toxic matters accumulating in the blood through the activity of the tissues; that of Ramon y Cajal, of an expansion and a contraction of the neuroglia cells, with their spreading filaments alternately open and close "connections among the neural elements, with the consequent appearance and disappearance of the walking state." Changes of cerebral circulation and of chemical composition of tissues no doubt coincide with the period of sleep; and toxic alterations of the blood with fatigue, the usual preliminary of sleep.

Dr. Sidis' contribution to the explanatory complex, though not entirely original with him, rests upon facts; and his argument is certainly ingenious. He considers sleep from the viewpoint of the reaction of the nervous system to stimulus; and it is obvious from the many experiments detailed, upon frogs, guinea pigs, kittens, puppies, and babies, that he has studied the subject deeply and extensively. If, he finds, a stimulus continues playing upon us at the same strength the system presently ceases to react upon it—that is, we cease to feel the sensation. To keep up the same level of a sensation, therefore, the stimulus must continue to rise; and if it is on the contrary monotonous and unvarying it will drop out of consciousness—the system will be asleep so far as it is concerned. "Stimuli which have exhausted themselves by their monotony drop out and are replaced by new ones until the whole round of stimuli is gone through and the organism, ceasing to respond to its external environment, falls asleep." This will describe sleep sometimes; as when one is "dog tired," and from sheer exhaustion becomes unconscious against one's wish. But in ordinary cases sleep is partly an artificial and voluntary product. "The whole round of stimuli" have not exhausted themselves; there is some fatigue as a rule, but not enough to convert a local lethargy into a general sleep. For the latter we must actively supplement the effects of the partial exhaustion by excluding other possibilities of sensation as far as we can. Hence "the chamber blind to light and deaf to sound;" and the lying down. The largest part of consciousness is made up of "motor" sensations coming from muscles, joints, etc., when lying down we get fewer motor sensations than when standing up, because the muscles, joints and other lesions are relaxed. The important thing about the posture is its effect (in this view), not on circulation, but on muscular tension and variations. Sidis finds that 75 per cent. of right handed people compose themselves for sleep lying on their right sides; and of left handed people on the left side. This is done to limit the more active side where there is the greater possibility of motor sensations; so that they lie on this or that side for a reason precisely analogous to that for which they close their eyes and pull the blinds down.

*The Gorham Press, Boston.

THE RIGHT OF AUTOPSY.

IN many Continental hospitals the question whether an autopsy may or may not be permitted cannot be raised by the patient or his friends; should death terminate the case the pathologist is at liberty to make the autopsy. This status, though it seem brutal, is nevertheless most propitious for science and the real benefit of mankind; for only thus can disease be studied under ideal conditions; only thus can possible (or shall we say, probable) errors in diagnosis and treatment be detected, only thus can a rational therapeusis be built up. In most American hospitals the consent of the family or of near friends is required before the pathologist can examine the body of the deceased; and thus much of our most valuable and instructive "material" is lost. An important suit in these premises was recently brought by the heirs of a patient who died in St. Joseph's Hospital at Far Rockaway, against two physicians serving in that institution; in the complaint it was alleged that after the mother's death it was discovered that an autopsy had been performed and portions of the body had been removed therefrom without the consent of her children. We here simply state this case, in order that our colleagues may note the difficulties that may perhaps inadvertently be encountered. According to the Penal Law (it used to be the Penal Code) in New York State, the right to dissect the hu-

man body is declared to exist only in four classes of cases: (1) those prescribed by special statutes; (2) whenever a coroner is authorized by law to hold an inquest upon the body, so far as such coroner authorizes dissection for the purpose of the inquest and no further; (3) whenever and so far as the husband, wife or next of kin of the deceased, being charged by law with the duty of burial, may authorize dissection for the purpose of ascertaining the cause of death, and no further; and (4) whenever any district attorney in the discharge of his official duties shall deem the exhumation and dissection of a human body necessary to ascertain the cause of death. Any person who makes or causes or procures to be made any dissection of the body of a human being except by authority of law or in pursuance of a permission given by the deceased is deemed guilty of a misdeameanor.

We would here for a moment discuss terms: By *dissection* in this legal phraseology is probably not meant dissection in the medical sense, by which we understand a very minute subdivision of the tissues, many of which (such as the muscles) are not examined in an autopsy; by *post-mortem*, again, we mean an examination just sufficient to ascertain the cause of death; by *autopsy* a thorough macroscopic and microscopic examination of the important organs and tissues. It is the last of these which we, as scientists, value and desire most.

According to the legal aspect of the matter it would seem that if the autopsy does not take place in connection with an official proceeding, it can lawfully be performed only with the consent of the deceased person previously given or by the consent of the relatives who are charged with the duty of burial; further, where such relatives assent, the post-mortem can be carried only so far as it is necessary to ascertain the cause of death. It makes no difference (and this we as physicians consider decidedly unfortunate) how greatly medical science might be advanced by further examination in a perplexing case; to go one step beyond the limit here indicated as fixed by statute is in violation of the law. Such being the case, we had best be on our guard lest we incur possible exasperating and expensive litigation.

Most of the cases thus litigated under this statute have been criminal prosecutions; and it has been supposed that civil suits could not obtain in these premises. However, in 1896 the Appellate Division of the Supreme Court in the metropolitan judicial department decided that a widow might sue for damages a Bellevue Hospital surgeon who, against her protestations and without her consent aided in performing an autopsy on the body of her deceased husband. The court in discussing the appellant's objection that there could be no such action because there was no such thing as property in a dead body, observed: "Irrespective of any claim of property the right which inhered in the plaintiff as the decedent's widow and in one sense his closest relative, was a right in the possession of the body for the purpose of burying it. The right is to the possession of the corpse in the same condition it was in when death supervened. It is the right to what remains when the breath leaves the body, and not merely to such a hacked, hewed and mutilated corpse as some stranger, an offender against the criminal law, may choose to turn over to an afflicted relative. If this right exists, as we think it clearly does, the invasion or violation of it furnishes a ground for a civil action for damages."

We think the court unfair in his characterization of the work done by the pathologist in the interests of science and for the ultimate welfare of the race; physicians are not wanton mutilators of the dead. Nevertheless any one who has had but very little experience with courts will agree that one had best keep out of them as much as possible; we cannot all of us live in South Carolina where, in a similar case, the Supreme Court refused to uphold an action, on the ground that an administrator has no property in the body. It were best invariably to get the permission of the next of kin or the lawful custodian, before witnesses, or in writing.

CANCER.

WE find in *The Medical Record* the valuable address on "Cancer in Man and Animals," which Dr. E. F. Bashford, of London, delivered before the recent Sixteenth International Medical Congress in Budapest. Cancer, it seems, is not limited to white men; all human races, civilized or savage, and even all vertebrates, even when living in natural conditions, are liable to it. In Japan, for example, cancer has been considered rare; yet that nation yields annually 25,000 deaths from this cause. Carcinoma of the lip, tongue, cheek, etc., is as common in English hospitals as throughout Hindustan. Carcinoma and sarcoma affect birds, fish (trout), mice, etc. The lesions are now experimentally reproduced.

The number of cancer victims has increased from year to year in practically all countries. It has become an alarming national problem in England, Germany and the United States, without regard to the universality of the phenomenon in man and animals.

Dr. Bashford considers that no evidence has been obtained in favor of an hereditary, congenital or embryonic explanation of the etiology of cancer, nor that any

analogy has been discovered with known forms of infective disease. He reminds us that seven years ago no one conceived it possible that portions of the mamalian organism could be kept growing for a period four times the length of life of the whole animal. But to-day the number of different kinds of tissues now being propagated separately makes it theoretically possible that the majority of the tissues, once they have acquired cancerous properties, may be so grown and segregated. In other words, a living animal can be analyzed into many of its living component tissues. These and many other achievements in the field of general biology are the most important practical fruits accruing from the experimental study of cancer, upon which they have only indirect bearing. "Ultimately they are bound to be of far-reaching general biological importance, although to-day they are merely the weapons that have been forged to attack cancer. Their further development and their utilization for the solution of purely biological problems will probably precede the solution of many of the problems surrounding the nature and cause of cancer."

THE HOOKWORM DISEASE.

THE specific cause of this disease is the ankylostomum duodenale, called also the Uncinaria duodenalis, an almost cylindrical worm 6 to 18 mm. long, a bloodsucker having at its mouth a set of hooks by which it attaches itself to the upper intestinal mucosa; the eggs may mature and become encysted; they are ingested from the soil in drinking water or by dirt-eating, or by penetration of the skin of bare feet by larvae in infected soil; Welch considers the latter to be the most frequent *via*. There are gastrointestinal disturbances, followed by gradually or rapidly developing anemia; the skin becomes yellowish or pale; there is weakness, palpitation, rapid pulse, cardiac dilitation and hypertrophy, with dyspnoea and edema in rapid cases. Hook-worm disease is differentiated from other anemias, and especially the malarial cachexia, by rapid development of the anemia, by the gastrointestinal disturbances and by the finding of ova in the stools.

The disease has recently become most prominent, and this largely by reason, not only of its dreadful effect upon the individual, but also of its social and economic aspects. For example, it has long been considered the "lazy man's disease," and to have afflicted only the very poor; but this view seems not quite correct: for the report reaches us that 30 per cent. of students at the University of Georgia, many of whom are sons of the best Southern families, are victims of this uncinariasis. Thus, it would seem, wealthy and educated men and women and children are not immune. Again: Surgeon-General Rixey has found the military service to be affected because many applicants from districts infected by the hookworm have been found physically disqualified for enlistment. In many Southern stations the number of rejections have considerably exceeded the acceptances; whilst for the country at large the reverse has been the case. This disease has become a national peril, in that it has decreased the social and industrial efficiency of at least 2,000,000 Americans, every one of whom it is making in greater or less degree a danger and a burden to their communities.

Welch, of Johns Hopkins, considers that the hookworm disease does not exist north of the Potomac. "The American worm cannot thrive in a certain kind of temperature." The parasite passes through the lungs, stomach, and lodges in the intestines. The disease is rarely fatal, but induces anemia, thus retarding development, and lowering vitality by which the victim easily incurs typhoid, pneumonia, tuberculosis, and the like. The treatment is simple, and effective within a few days. Salts and thymol are indicated. The consequent anemia, of course, requires more prolonged treatment. Germicides used are to destroy the ova voided.

It is confidently hoped that the munificent gift of one million dollars by Mr. John D. Rockefeller will go a long way toward eradicating the "hookworm"—which, it would seem, has for generations ravaged the "poor whites." In any event, much should now be accomplished. Only two or three years ago the subject was almost entirely monopolized by the funny men of the lay press throughout our country. The subject is, in fact, serious enough, as in the case of tuberculosis and other infections, the extent of the evil done can be estimated in dollars and cents, wherefore Mr. Rockefeller's gift should be contemplated with enthusiasm not only by physicians and humanitarians, but also by men of business and of public affairs. As in most of his benevolent undertakings, Mr. Rockefeller has appointed a board of twelve members, prominent and able men, most of whom have been influential in administering his other great gifts for education and medical research; a wise and scientific administration is thus assured. The task, however, will be difficult; not in the treatment of the disease itself, which is simple, inexpensive and effective; but in that most of the sufferers will after cure have to change their habits. And here the difficulty will lie; for most such patients are ignorant, intensely conservative and too weak in mind and body to welcome and act upon new ideas. There will be money enough at this board's disposal; but more than money will be needed. Especially will they require the co-operation of the States and communities involved in order that the people may be educated in the laws and principles of intelligent sanitation.

PELLAGRA.

PELLAGRA—"rough skin"—was until recently supposed to be rare in our country. Many cases are now, however, found in the South; and even in a Brooklyn hospital such a sufferer is under treatment. The disease is now being carefully studied. South Carolina is taking the lead; and naturally, since perhaps half of the one thousand pellagra patients in the United States are within its borders. Besides, a national conference which was convened in Columbia, S. C., on November 4th, the United States Public Health and Marine Hospital Service, presents in its weekly reports much important information on the subject.

Pellagra may affect a person unrecognized for years and will first be detected in a victim who has had his mind affected to the extent that he entered an asylum for the insane. It was under such circumstances that Lombroso studied pellagra in Italy. In such an institution the disease was first recognized in this country some forty-five years ago; but the case was forgotten. Up to 1907 only three or four other cases were recorded; and Osler indeed, in the 1905 edition of his book, states "it has not been observed in the United States." No doubt the disease has often been mistaken for eczema, dermatitis exfoliativa malaria, delirium, hookworm disease and tuberculosis. In 1907, however, a number of cases were recognized in Alabama and South Carolina; and in the summer of 1908 the disease was identified with Italian pellegra by two South Carolina physicians who visited Italy to study it. Since then it has been reported from various Southern localities. In the Northern States, however, it seems rarer; the only States north of Maryland heard from are New York (a "few cases near Brooklyn"); Pennsylvania (one case); and Illinois (a number of cases in the Insane Asylum at Peoria.) Most of the victims of the disease in the South are negroes and poorly-nourished persons living in unhygienic surroundings; the great majority of the sufferers are females.

The patient may for years have suffered, the disease having been unrecognized. The intestines are affected, the vitality is lowered, there results inertia, both mental and physical, so that laziness is imputed. There is emaciation and finally the mental condition which warrants treatment in an insane asylum. Even in the early stages the prognosis is grave; the course is considered chronic—perhaps a score of years. Cure nevertheless seems possible.

We are not certain as to the etiology. There is a popular belief in Italy and Germany that one contracts pellagra through eating mouldy corn or drinking alcoholic drinks made from such corn. This belief in Germany has obtained to the degree that many will not eat this vegetable; here is possibly one reason why our Agricultural Department at Washington has met such difficulty in introducing corn into that country. It seems as certain as it is logical to conclude, that abject poverty, and all that the term implies—poor and insufficient food, bad housing and drainage, unhygienic surroundings, mental depression, misfortune, alcoholism—lower physical resistance and predisposes to pellagra. It is obvious that in the prophylaxis we should so far accredit popular opinion regarding corn as to exclude from the dietary of possible victims such corn as seems mouldy or infected with parasites; it is on the other hand difficult to believe that this splendid vegetable, when fresh and properly grown, should be a menace to health.

There seems to be no specific for pellagra. Arsenic and sodium chloride are approved medicaments. Rest, hydrotherapy, and sanitary living conditions are important therapeutic factors. A serum has been evolved, upon the theory that specific antibodies are developed in the blood of pellagrins. Dr. C. H. Lavinder, working in the insane asylum in Columbia, has treated two cases with blood serum taken from cured pellagrins. One case died of pneumonia soon after treatment was begun; "the other seemed to improve for a while, but is now much emaciated and is not expected to recover." Cole, of Mobile, reports a cure by transfusion of blood from a cured pellagrin; he has recently tried this in other cases and reports good results. Babes and Zion hope to produce from the horse an efficient anti-serum.

We fear that, with uncinariasis and pellagra added to their nosology, our colleagues in the South shall have to expect long days of labor and nights devoid of ease.

THE WONDER OF AVIATION.

WILBUR WRIGHT was recently asked his opinion when aeroplanes would be in as common use as automobiles, and answered: "Oh, in a million years, perhaps." We may then assume the likelihood that aviation will never be a general means of conveyance; though there is a possibility of this for dirigible ballooning, which is by comparison a perfectly safe means of locomotion. A balloonist, commenting on the dangers of automobiles, both to the occupants and to others, declared his decided preference for a comfortable, safe balloon.

The difficulties and the dangers the aviator has to meet are probably not all considered. There is of course the danger of falling like lead to earth should there be the collapse or breakage or stoppage of the machine. People marvel at the rapid flight of the aeroplane; in point of fact, the machine could not go slow

and stay in the air. It must travel at least twenty-six miles an hour.

Besides the obvious dangers and difficulties there is the fact that this form of locomotion differs from all others in that it involves three-dimensional steering. Other vehicles move in a single plane; and they go safely so long as they do not collide with other vehicles, and are kept from going wrong to right or to left. The bicycle is a two-dimensional affair, in that it has to be balanced as well as guided; but the balancing gives no difficulty after the start, and as related to its pathway, it can move in only two dimensions.

It is, however, in the three-dimensional nature that the real wonder in aviation lies; the difficulties for the operator are here almost appalling and they demand constant attention. The automobilist, for instance, has difficulties; but they all have to do with the horizontal, whilst the aviator can make mistakes all around a sphere. The latter has to listen to every sound from a most complicated and delicate engine; then he must manipulate one rudder for up and down, another for right and left, and two more at the ends of his wings; and all these must be co-ordinated. Then there is the medium through which the aeroplane travels—the inconstant air, with its fitful winds and treacherous gusts; water is stability itself when compared with this medium. The aviator has not a moment's rest or freedom from anxiety from the moment he leaves the ground until he returns to it. The hazard would indeed be too great for most of us; there will probably always be ten to admire the aviator in his flight for one to be his passenger.

CESARE LOMBROSO.

THERE is much that is provocative of reflection for us in the career of this really great man, who has recently passed away. He stood for much that was erroneous; much his friends and well-wishers had reason to regret. Yet his fame will be enduring, and the gratitude of posterity should be assured him by reason of at least two great achievements: He established "criminal anthropology" upon a scientific basis; and he educed the physical and material causation of certain forms of insanity. His great defect was temperamental—in that he sought to conform many things which could not logically be made to fit, with his scientific hypotheses.

Lombroso, it seems, was the first worker who pointed out convincingly that there is a relation between certain hereditary and anatomic defects and crime; and these labors of his have inspired our present day efforts to transform seeming vicious and stupid children into bright and good pupils by such simple operations as the removal of adenoids, by correcting errors of refraction, and by treating such orthopedic affections as spinal curvature.

Again, we are only now in America realizing a debt to Lombroso; and such realization has arisen out of the discovery among our people of pellagra. Lombroso long ago pointed out certain easily removable dietetic or environmental conditions among the desperately poor peasantry of Italy—conditions which bred diseases of which crime and immorality were merely symptoms. He demonstrated, for example, that a form of lunacy common in Italian asylums, was a result of malnutrition, produced by the consumption of maize that had been badly grown and cured. The fungi, penicilli and aspergilli that form on the fermented maize secrete toxins, which Lombroso extracted and administered to healthy men and animals. The symptoms of pellagra resulted, such as we now find among our people in the South. And in spite of opposition and ridicule he compelled the authorities in Italy to institute such prophylaxis as has materially reduced the number of the "pellagrosi." We thus see demonstrated one cause of insanity from vitiated blood and tissues; and may rightly infer that other violent and chronic neuroses may originate in like manner.

Following his researches into the relation of malnutrition and mental deficiency, he devoted several years to studies of the "conditions precedent" to epilepsy; and then evolved his theories (which are not entirely accepted) on association of the "epileptoid cachexia" with abnormal developments, sometimes appearing in so-called "genius" and in eccentricity of character and in crime. Researches in comparative craniology added confirmatory evidence; and his book, "Uomo Deliquente," was the culmination of his fifteen years of observation and research.

It has been observed—and possibly correctly—that if he had died thirty years ago, after the publication of this great book, his name would stand high among men of science. He was virtually, as we have noted, the pioneer in this new manner of investigating mental disease; and he was the originator of new theories in anthropological study, which have been profitably followed up by others who have held close to demonstrated and established facts. This is absolutely the only safe course in science—which Lombroso unfortunately did not always preserve. The result was a mass of unscientific writing in his later years, which have unfortunately detracted from his real worth and achievements. He did perhaps more than any other man to discredit the sciences he originated. "The reckless twisting of facts to suit his hypotheses, as in his endeavor to prove that genius is the result of epilepsy or

kindred lesions of the brain; the credulous grasping at untrustworthy and unexamined evidence, as in his demonstrations of criminality from newspaper pictures professing to represent the likeness of accused persons, and his readiness to subject nearly every matter that interested the public for the moment to his formulas, naturally aroused scepticism even about the grain of possible truth contained in his theories."

He jeopardized his scientific reputation to the desire of popularizing his work and to a craving for notoriety. He rushed into print upon subjects he really knew very little about; and he tried to enforce personal opinions by the use of his professional reputation. Yet, *de mortuis nihil nisi bonum;* besides, we all know that such craving to see one's name in the newspapers is not confined to Italy alone. There are possibly a few "yellow" scientists, even in these United States.

Lombroso's last book, "After Death—What?" has appeared almost simultaneously with his death. He has assured us his spirit would communicate with us; yet no "materialization" has been vouchsafed us, nor is any to be expected. Lombroso fell into the pitfall wherein he was joined by such "hard-headed" scientists as Schiaparelli, Flammarion, Hodgson, Sir Oliver Lodge, William James, Royce, Hyslop and many another; amazing how soft the hard head of the scientist becomes when he takes to subjects metaphysical.

Trifacial Neuralgia.— F. V. Hussey (J. A. M. A., Aug. 28, '09) classes facial neuralgia as major and minor. The latter are due to peripheral causes, as carious teeth, disease of the antrum of Highmore, or nasal sinuses, by hypertrophid turbinates, nasal spores, etc. The major neuralgias are probably due to a central lesion in the Gasserian ganglion, although in these cases the causes may at times have been peripheral. The pathology is still indefinite. After extensive investigation there still seems to be no definite lesion demonstrable in every Gasserian ganglion removed. The lesion when present may be of a degenerative type—interstitial neuritis or a neoplasm. Arteriosclerosis is a common condition seen. In a peripheral nerve there may be an ascending neuritis, which may secondarily affect the ganglion.

The treatment is in three divisions: The medical stage, in which the treatment is often effectual in the minor neuralgias due to constitutional conditions; applications are made also to nose and mouth; not to be persisted in without results. The peripheral operation stage; neurectomy or avulsion is often effective when one branch of a division or one division is affected; this stage includes injections of 80 per cent. alcohol in the region of the painful nerve, with oftentimes very satisfactory results; cases should here be carefully selected, and even so there will be a certain percentage of recurrences. Thirdly, the stage of intracranial operation; such operations are indicated in all types of major neuralgia where medical treatment and peripheral operations have been tried and have failed. The operation advocated by Spiller—the division of the sensory root of the Gasserian ganglion, seems to be the most rational one.

BIBLIOGRAPHICAL

Medical Diet Charts. Prepared by H. D. Arnold, M. D., Professor of Clinical Medicine at Tufts Medical College, Boston. Philadelphia and London: W. B. Saunders Company. 1909. Single charts, five cents; 50 charts, $2.00; 500 charts, $18.00; 1,000 charts, $30.00.

These diet charts are excellent, and the general practitioner will find them essential in regulating scientifically the diet of his patients—and that with comparative ease. They give on one sheet all the data necessary for arranging and calculating the nutritive value of a diet and furnish a convenient means of recording the results. Chart A has space for recording the diet for five successive days or for five changes of diet for any interval of time. Chart B fulfils the same functions for a single day. There is one feature that makes these charts extremely practical, namely, the information they give as to the nutritive value of food in measures such as they used in everyday life. They will prove a revelation to the general practitioner who has always wanted a chart of this kind.

Clinical Studies for Nurses: For Second and Third Year Pupil Nurses. By Charlotte A. Aiken, formerly Superintendent of Columbia Hospital, Pittsburg, and of Iowa Methodist Hospital, Des Moines. 12 mo. of 510 pages, illustrated. Philadelphia and London: W. B. Saunders Company. 1909. Cloth, $2.00 net.

This book has been prepared to meet the need in systematic, concise and connective form, of the nurse in the second and third years of training, and also in practical experience; to help nurses to more easily and quickly get hold of the main points connected with the various diseases commonly encountered, and to save time in research.

The text is well written and sufficiently illustrated. The book can be commended with confidence.

Diseases of Infants and Children. By Henry Dwight Chapin, A. M., M. D., Professor of Diseases of Children New York Post Graduate Medical School and Hospital, etc., and Godfrey Roger Pisek, M. D., Professor of Diseases of Children, University of Vermont, etc. With 179 illustrations and 11 colored plates. Octavo, pp. 609. $4.50. New York: William Wood & Company. 1909.

This volume has been written by experienced teachers in the interest of students. It familiarizes the reader with the more recent tests, as well as the older practical bedside experience, so that he may, by a systematic examination, be able to make a scientific diagnosis. He is also taught to treat rationally and with a distinct purpose in mind.

The text is eminently practical, and covers conditions actually encountered at the bedside. It is also well illustrated.

The book occupies a middle course between the compendium and the too exhaustive work, both of which are unsatisfactory.

The work can be highly commended.

Annual Report of the Board of Health of the Department of Health of the City of New York, for the year ending December 31, 1907.

This is just such a report as we might expect from such a man as Dr. Thomas Darlington, Commission-

er of Health of this city.

It contains 857 pages of valuable information and statistics of great value to the health officer.

Primer of Sanitation, Being a Simple Work on Disease Germs and How to Fight Them. By John W. Ritchie Professor of Biology, College of William and Mary, Virginia. Illustrated. 1909. 12 mo., pp. 200. 50 cents. World Book Company, Yonkers, N. Y.

This is the first book in our language to teach fifth or sixth grade pupils, how to escape germ diseases, and how to co-operate in conserving the health of the community.

The text is written in a simple manner, suitable for school use, and we commend the book to our public school authorities as one fit for their purposes.

The Medical Record Visiting List, one of the best published, has been thoroughly revised to date. It is an economizer of time and trouble, and may save a large percentage of accounts. Send to William Wood & Company, 51 Fifth avenue, New York, for prospectus. Price, $1.25.

The Physician's Visiting List (Lindsay & Blakiston's) for 1910. Fifty-ninth year of its publication. Price, $1.00. Complete, compact and simple. Send for literature to P. Blakiston's Son & Co., 1012 Walnut street, Philadelphia.

Surgical Diagnosis. By Daniel N. Eisendrath, M.D., Professor of Surgery in the Medical Department of the University of Illinois (College of Physicians and Surgeons). Second revised edition. Octavo of 885 pages, with 574 original illustrations, 25 in colors. Philadelphia and London: W. B. Saunders Company, 1909. Cloth, $66.50, net; half Morocco, $8.00 net.

The fact that a second edition of a work in surgical diagnosis should be called for within two years, is sufficient evidence of usefulness.

The text has been thoroughly revised and much new matter added, including the newer methods of diagnosis, and the chapters on Cystoscopy and Ureteral Catheterization have been amplified. Corrections has been made in regard to localization of the motor centers in the cortex of the brain. Many additions are observed in the section on acute abdominal conditions. The section upon diagnosis of renal lesions has been entirely rewritten. Many new and original illustrations have been added.

It is a most practical work for its purpose. It is also a fine specimen of the book-maker's art.

Clinical Examination of the Urine and Urinary Diagnosis. By J. Bergen Ogden, M. D., Medical Chemist to the Metropolitan Life Insurance Company, New York. Third edition, revised. Octavo of 427 pages, illustrated. Philadelphia and London: W. B. Saunders Company. 1909. Cloth, $3.00 net.

The present edition of this popular work shows important changes in the text, in order to conform to the advances that have been made since the last edition was issued. Not only have changes been made in methods, but a special effort has been directed toward bringing technique to a higher degree of efficiency. Elimination of unimportant matter has prevented increase of bulk.

The subject of urinary examinations for purposes of life insurance has been incorporated in a condensed form, easily understood and quickly applied. It is the book for the busy clinician.

CORRESPONDENCE

THE NEW "CURE" FOR DRUG HABITUÉS.

To the Editor NEW YORK MEDICAL TIMES:

May I have your indulgence to make a few observations concerning the Lambert-Towns "Cure" for the Morphia and Cocaine habit—a brief account of which you give in the current number of the MEDICAL TIMES?

First, however, I wish to express my regret to see the name of a physician of professional prominence vaunting the "new" treatment as a positive Cure for so grave an affection.

"Cures" of the habit referred to have been effected, from time immemorial, by means of the most irrational and absurd,—just as supposed cures of other maladies have followed the application of methods the most irrational. There is no method of treatment, however absurd, in all history of medicine, that has not been supported by large percentages of "cures." Nevertheless, the cures in all such instances are misleading, and, as a matter of fact, false. Not that recovery has not taken place, but that it was due to Nature, and not to the drug. Hyoscyamus and Belladonna were prominent drugs for morphia addiction when I was a student of medicine in New York more than fifty years ago. The effect was nil, except in certain cases where the character was sufficiently strong to enable the victim to break the infernal habit with little external aid. Nature in time did the rest, as she occasionally does it now.

The so-called new treatment of the malady under consideration is really more unphilosophical than the method of "Mental Healers," or Christian Scientists, and a thousand times more absurd. To give oft-repeated doses of deadly drugs in such cases is like beating one on the head with a club! If Revulsion is the end required, either method will produce it. But it would be a travesty on the principles of rational medicine. The new treatment is as irrational as the last named procedure would be. It comprehends combating the intoxication of one drug by that of heroic doses of another more deadly. This procedure is admissible, of course, to some extent, and might succeed, if hypnotic habits were the only evil to combat. But, as a matter of fact, it is the least. In all cases where either morphia or cocaine has been taken in inordinate and increasing doses for a long period, we have not only a habit to break, but a *person to deal with* whose brain and nerve-centres have become so abnormally changed as to change the whole affective life and character of the victim. He is not the same being. He has lost his normal character. And since these proximate changes of nerve-cells and fibres are the result of long courses of drug poisoning, and have become a second nature, so to speak, it must necessarily require a course of treatment almost equally long to undo these effects and restore the normal condition of brain and mind. All students of pathology know this; yet the claim is made that a few doses of toxic drugging, heroic enough to destroy the life of a well person ten

times over, restores a morphia or a cocaine fiend to his normal condition *in a few days*! It is passing strange to me that anyone but a mercenary charlatan could make a claim so extraordinary and misleading. It is a trite saying and true, that quackery in the profession is the cause of quackery out of the profession.

Your correspondent has had a good deal of observation and experience in the treatment of these cases, during fifty years of practice. They have led him to the conviction that *the patient should be under absolute control;* given decreasing doses of the same drug; the suffering treated with mollifying doses of such other drugs as the symptoms may indicate; and the judicious application of Hydro-therapeia, the Roman bath chiefly, and massage.

One may safely trust the *vis medicatrix naturae to* do the rest. But it takes time and patience, and a good deal of both.

DAVID ALLYN GORTON.

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RETROSPECTIVE

SIDELIGHTS ON THE PRACTICE OF MEDICINE.

Much that has been said of osteopathy applies equally to Christian Science. These people deserve the credit of being the real pioneers in applied and tried-out psychotherapy. They have gone to the Good Book and adopted a few of its statements which they have twisted and expanded in such a manner as to form a basis for the ideas which they endeavor to promulgate. It is not a religion, for religion and Christianity are not qualities intended to be simply passive and self-satisfying. The very essence of Christianity is "to visit the widowed and fatherless and to keep oneself unspotted from the world," of action and doing, rather than in cultivating an introspective calm that makes one oblivious to environment and the rest of the world in general. "What's the use?" may tend toward nerve stability and a dreamy passivity, but it has no great tendency to advance the world morally, educationally or otherwise. Selfish apathy is no more right than the asceticism and self-abnegation of the dead past. Christian science has accomplished much good, but it is wrong to impute its merits to Christianity, for it is not according to the religion that Christ taught and practiced. It is simply due to the well-known psychological principles upon which it is founded—the law of life and living. It is not at all surprising that people who embrace this cult should have their minds diverted into new channels or even sidetracked into the great chasm of forgetfulness and thus derive some mental and physical benefits. Woman, whose aches and ills are many, and whom man with an abortive attempt at wit has said is "a constipated creature with a headache and a pain in her side," hearkened unto the wooings of this unique system of healing and has been enabled to forget for a while what she harbors about her womb or other offending organs and appendages. The benign results are due to the cultivation of a good forgettery. Perhaps she would have been equally blessed and benefited had she sunk the ego and developed a self-amnesia by doing more for those about her, for such is never a case of "love's labor lost." For some time the Christian scientists have seemed to hold a little corner on their system of healing, but now others are breaking into it. It may be a little early to prognosticate, but it seems at the present time that at no great distant day all that is most undesirable and absurd in Christian science will be eliminated and the good in it will be injected into religion and be espoused by our churches. A movement to this effect is already gaining quite a little momentum. It is no occasion for alarm. There is no danger of medicine ever again gaining ecclesiastical control or being dominated by the priesthood. We have outgrown those things. At the same time we have grown altogether too materialistic and neglected the spiritual, intangible side of our being. We have developed a cold and calculating science which is disposed to look upon all our ailments as something which we ought to be able to see and eliminate in a physical manner. It is proposed by some of the big churches to take over and treat according to established and conservative psychotherapy many of the functional and neurotic ailments after such cases have been diagnosed by physicians. The physician gets his fee for diagnosis, which he would perhaps not have received had not the case been referred to him. Instead of creating hostility toward the profession, as is created by nearly all the irregular systems of treating disease, the physician is given due recognition. The conditions which the church would essay to treat in its clinic are only those of a purely functional character, such as despondency, melancholia, insomnia, violent temper, abnormal appetites and propensities, and allied "complaints." To voice such sentiments as these may mean to invite the anathema of "heresy" from some selfish and not very deep-thinking reader, but until the profession embraces a diversified and far-reaching therapy it will find itself in considerable measure supplanted by one-idea cults and systems that claim to hold all that is good within the narrow confines of their own little circles.

Another "sidelight" to medicine—and it might be considered from the standpoint of psychiatry or forensic medicine—is woman's veracity as compared with that of the ruler of the earth, man. The writer is a man, a very small one, and he thinks a great deal of woman both in the concrete and the abstract. He is not alone—there are millions of us. Few men are women-haters. There may be a few homely, miserly, useless excrescences known as old bachelors whom a kindly Providence has kept from spoiling the lives of a few good women, and these surly and sordid individuals live their unkempt lives alone professing to harbor within the chunk of ice where their hearts should be an animosity toward the gentler sex. But notwithstanding all the esteem and adoration which men bestow upon women, sentiment is eliminated—and the psychology of woman's nature is rudely pryed into our ideals of her sex often get quite a jolt at the little evidences of untruthfulness revealed. A woman's testimony in most things, especially in matters concerning herself personally, has always been accepted without the usual grain of salt. Her living or antemortem testimony in regard to rape, attempted or successful

abortion, promise of marriage and many other things is taken bona fide by man whether he be judge, juryman or layman. A condition very akin to sex worship has for many generations prevailed and woman has occupied an exalted position in the world. It would be unnatural if there were not numerous violations of the high measure of esteem and favor which womankind has so long enjoyed. The violation of privileges is not a matter that belongs to sex; it seems to be an innate propensity of human nature, but fortunately in both sexes is a matter that is more sporadic than general. This then is the true status of woman and her relation to society and the courts as we find her to-day. There are reasons for her shortcomings and perversities, although this is no attempt to condone or palliate them. Matters touching woman's veracity should have more careful scrutiny, especially when her wrath or jealousy would prompt her to wreak vengeance or work hardships on others that she may gain her own selfish ends. In the affair of morals and equity she should be placed on a common level with man. She deserves no special favors by reason of her sex and none enjoyed by man should be denied her, not even the ballot-box. Man by reason of sex-adoration has caused woman to be skilled in dissimulation, a past-mistress in coquetry and deception and, sad to relate, to often handle the truth with reckless abandon, especially when she can gain even momentary favors. It is hard for a jury of men with a taint of the neuropathic element, handed down from a long line of ancestry, which looks upon one-half the world as being incapable of wrong-doing to convict a woman of the most heinous crime, especially if she be young and freely resorts to the trusty weapon of lachrymation and the other feminine arts and wiles which have pulled the wool over man's eyes in all ages. "Man tempted me," is woman's most insurmountable defense no matter what she is charged with. Granted freely that woman's lot is a hard one and that she is too often the victim of man's perfidious and villainous ways, but that does not in itself constitute an excuse for a double standard of civic rights and wrongs. By unwritten but hereditary usuage we make it easy for woman to deceive and be untruthful both in private life as well as when she is occasionally brought into the court-room. Here it might be apropos to call attention to a case that is fresh in the minds of many medical men. A few months ago a young woman in a Michigan city made a dying statement to the effect that her death was due to an operation for abortion performed by a doctor of the same city. The doctor whom she sought to incriminate had always borne a good reputation and unimpeachable character. Perhaps no mere words can describe the mortification which that man felt when he realized that in the minds of his large and respectable clientele he was guilty of a low and despicable crime, one that could only be classed with those perpetrated by bowery thugs, dope fiends and the rest of the ilk of the underworld. In his mind this doctor could only picture the gaping maw of a state prison ready to swallow him up there to end his dishonored days surrounded by the lowest and vilest of God's creations after His own image. But fortunately the unexpected happened and the miserable woman did not die. At the trial which followed soon after, this woman on cross-questioning fell down and resorted to tears, that extenuating brine which is always rung in as a dernier resort, and confessed that the doctor was in no way connected with the case. This case is a powerful object lesson. It is only more or less typical of scenes that are being reinacted every day. One year ago an old doctor, nearly an octogenarian, at Peoria spent several months in jail awaiting trial, a dying woman having left the testimony that he had performed a criminal operation upon her and should therefore pay the penalty. The old doctor was not regarded by the jury as being innocent and exonerated, but the case against him was dismissed on the grounds that too long a time had elapsed between the time of the alleged operation and the woman's death—some three weeks. How easy it is for medical men to fall into these traps whether they be guilty or only incur the wrath of some designing and unprincipled female. A doctor is never safe, but it is always the safest rule to stone one's heart against the "woman in trouble." The woman who seeks to be relieved of her unborn child is never safe. It is true that she may keep eternal silence on such matters when either misguided or unprincipled doctors give her the relief she seeks, but it is only for her own benefit that she is reticent and, incidentally, because she may think that she may possibly require assistance at some future date. Woman's word on all matters relating to her loves and her sexual functions, whether in court or out of it, should always be taken for what it is worth. Every medical man of good intelligence and experience knows these things to be true. It is one of the unfathomable mysteries why a legally married woman will swear by all that is good and holy that she is not pregnant even to the very last. Judges of the higher courts now give a good deal of consideration to the leniency and latitude that is accorded woman and manifest a disposition in so far as possible to eliminate traditions and sentiment that hover about a woman's head when she is either on trial or on the witness stand. This idea should extend to the public as well, and "ungallant" though it may be, we should educate ourselves into an understanding of the truth that woman is no more veracious than man. There are times when she is less so.

Organized medicine has essayed to regulate the proprietary medicine business. The ban is played on certain products, while others in the same class and of perhaps equal merit are given ethical sanction. It is not the intention to here question the "propriety" of such deliberations, although it naturally suggests the biblical story of a great deal depending upon whose ass is gored and whose ox does the goring. Since nearly all proprietary products that make an appeal to the profession for patronage must necessarily have merit or they could not hope to fool physicians, it would seem that this phase of medicine is amply able to adjust itself in the right manner. It does not jeopardize the best interests of either the profession or the laity. One is able to judge and understand, the other does not as a rule figure

in the case because these goods do not go directly to them. There is no use of raising a row within the medical ranks over these matters, and we have arrived at that degree of common sense when any physician can employ anything he chooses, regardless of brand, and be none the less ethical for so doing. But there is one specie of reform that should be brought about by judicious legislation in every state in the union. The organization should take the matter up, although individual efforts would doubtless bear good fruitage. I refer to the disgusting newspaper advertising and the preposterous promises of the blatant quack. Common decency demands some regulation of this evil. It is little better than a common nuisance. The "weak men" specialists ply their trade with brazen effrontery. They try to inoculate every adolescent male with the belief that even a semi-occasional emission is pathological and a harbinger of danger. Unchecked emissions will soon bring about a condition of instability of brain and a wreck of nerves that will unfit the luckless victim for both mental and physical work, and he is destined to fill a suicide's grave, or if he is so unfortunate as to live a madhouse will engulf him. There is presented a picture calculated to give the unsuspecting youth a whole herd of gigantic nightmares. He sees his finish. He wilts. In consequence of his scare his insignificant symptoms are multiplied a hundred-fold. It is a part of the business to give him a good scare and make him introspective. When het gets his mind firmly implanted on his sexual organs emissions come much more freely. When a man becomes obsessed with the idea that his sexual function has all gone wrong it is like removing a mountain to get the idea out of his mind. Persons who begin taking treatment for alleged "sexual weakness" are likely to engender other habits, especially the medicine habit, and are prone to become neurotic or vacillating in their character. They can not get away from themselves and their little ailments. The "weak men" advertisements and the literature they scatter over the country is a source of much harm to young men as well as to many who are older. If one so much as addresses one of these quacks a note of inquiry he is hounded to death if he does not consent to take treatment. By their follow-up system of letters so skillfully gotten up they create the impression that they are giving the case at hand "individual" attention. Their letters while always cunning and adroit embody every sort of emotion calculated to have a seductive effect upon an overwrought mind. A year or so ago I wrote a postal card to a quack who advertises like a circus, guaranteeing to cure everything. I asked if he could cure me, but carefully avoided stating what my troubles were. He took it for granted that my case was in the category of those just named. An avalanche of letters poured in on me for several weeks and I was begged to be cured before it was everlastingly too late. By turn the letters were wheedling, coaxing, jollying, threatening and horrifying. I could not but think what effect they would have upon an unsophisticated youth. The "individual interest" was made paramount. One letter from the "big doctor" started out: "When I have a little time I spend it writing to my patients. You have been in my mind all week," etc. These stock letters are so arranged as to meet the exigency of almost any case.

There are many other kinds of advertisements almost as repulsive and harmful. If all people were well-informed and possessed of good mental and nerve equilibrium they would be immune to such charlatanry, but unfortunately this condition does not always obtain. Many poor coughing consumptives are also coughing up good, much-needed cash for dopes that are worse than useless. It ought to be criminal for any one to advertise medicine that will cure consumption. And who has not gazed with awe upon the picture of the man who is falling dead from heart disease? This appeals with force to the large and ever-growing contingent who imagine they have "weak hearts." The sad and dejected-looking gentleman with his hand on his back exclaiming, "Oh my kidneys!" ought to wring a tear from the stoutest heart, if you will permit mixed metaphors. Advertisements of this kind have deluded many people into the belief that a pain in the back is a symptom of incipient Bright's disease. Another whole-page ad. appears before me in a "household" paper, subscription price ten cents per year. The great professor with an immense stack of his books which tell how every disease that can tackle man is easily and expeditely cured passes these out to the army of men and women that are marching past him. It is a perspective drawing and there must be in "life size" and miniature more than a million people coming in line to secure this wonderful volume. A few of the disease (?) symptoms that are regarded as especially alarming are suggested by the following questions:

"Does your heart pain you, flutter or skip beats?"

"Do you have shortness of breath upon going up stairs, walking, talking or singing?"

"Do you have nervousness or spots before the eyes?"

"Do you have hungry or weak spells?"

"Are your feet and head cold?"

And so on. Such advertisements flaunted daily before people tend to magnify minor ailments into those of serious import and serve the purpose of perpetuating the disease idea where there is no occasion for its existence. Such advertising is offensive to good taste and is calculated to do much harm. It should be suppressed or regulated by legislation.

Diet in Typhoid Fever.—Dr. Warren Coleman (J. A. M. A., October 9, 1909) in referring to the history of typhoid diets says that starvation was the accepted practice for centuries in fevers of all kinds, and included deprivation of water. Graves (1835) was the first to recommend a diet which was at the time considered revolutionary. Since that time there has been a steady but slow tendency to increase the amount of food allowed to the patients. Only exceptionally to-day do we find the physicians, once they have used the higher caloric diets, advocating a return to the older methods, and as a rule their arguments are based on questions of digestibility rather than on the energy value of the foods.

There is strong experimental and clinical evidence in favor of giving typhoid patients sufficient food to meet their demands for energy. It is well known that partial starvation lowers the resisting power of heal-

thy persons, and Ewing believes that many of the clinical and pathologic phenomena in severe cases of typhoid fever are directly attributable to an auto-intoxication resulting from the excessive destruction of body tissues. The loss of weight in typhoid fever has been attributed to two causes: to the temperature and to so-called toxic destruction, but the author has found that the losses can be prevented by a high caloric carbohydrate diet. As no diet hitherto proposed for typhoid fever has furnished sufficient energy for the metabolic exchanges of the patient, the author has concluded that the most potent factor in the losses of the disease is partial starvation.

The best results were obtained when the diets furnished 4,000 to 5,500 calories. Forty-six patients altogether were on the diet with only one death, and this case was of the ambulatory type, with a very feeble pulse on admission. Some of the patients were kept almost in nitrogen equilibrium throughout the disease. It was not unusual for patients to weigh as much or even more when they were allowed to get up as when they were taken ill. Relapses were of a low percentage, and convalescence appeared to take place rapidly.

The diet used consisted, in the main, of milk, cream, milk-sugar and eggs. In addition small slices of stale bread or toast were allowed, with as much butter as the patient wished. The daily quantities of these articles of food were about 1½ quarts of milk, from 1 to 2 pints of cream, from ½ to 1 2/3 pounds of milk-sugar, and from 3 to 6 eggs.

Should the cream upset the stomach or produce diarrhoea, it must be withdrawn. The food has been given at two hour intervals, except that patients have not been awakened at night. The cream has usually been added to the milk, in the proportion of 2 ounces cream to 6 ounces milk, though a palatable ice-cream may be made with cream and milk-sugar. The milk-sugar should be given in small quantities at first—a tablespoonful to the glass of milk—and gradually increased to 4 tablespoonfuls. The eggs may be given soft boiled, soft poached or shaken up in milk, with or without whiskey.

The author sums up his article as follows:

1. The practice of partial starvation, at present followed in the treatment of typhoid fever, is highly detrimental to the patient's welfare.

2. It is not only desirable but necessary that the typhoid patient be given sufficient food to cover his energy expenditures.

3. The amount of food required for this purpose will vary with different patients, but may be estimated approximately on the basis of 40 calories per kilogram of body weight per day.

Gastric Symptoms and Gall Bladder Disease.—Dr. Harry Adler (Med. Record, October 9, 1909) thinks that there are a number of cases of disease of the biliary passages, which may be overlooked on account of the more prominent gastric symptoms. Examination of the urine for bile in these cases is very necessary. Rosin's method was used in the cases cited, and is as follows: Tincture of iodine is diluted with alcohol until about the same color as that of the urine to be examined. It is carefully run down on a small amount of urine, so as not to mix but to form a layer. If bile be present at the plane of contact, a pale green ring of biliverdin is formed. It is best seen by holding it against a white background. If the amount of bile present be extremely small, the ring appears only after standing a few minutes. This test is by far the most sensitive of simpler methods, giving positive results, when Gmelin's test or its modifications are negative.

By Rosin's test choluria can be demonstrated in many cases where there is no suspicion of jaundice, and thereby furnish an invaluable aid in this difficult field of internal medicine. The test may also be of value in proving whether a yellow sclera is due to bile or simply to subconjunctival fat.

The explanation of the choluria in these cases where there is no occlusion of the common duct lies probably in the extension of the inflammation of the gall bladder during the attack to the bile passages with interference with the flow of bile, as brought out by Riedel; or on the basis of Minkowski's theory that a disturbance in the function of the liver cells is produced which results in a secretion of bile in an abnormal direction.

Municipal Campaigns for Reducing Infant Mortality.—Dr. S. W. Newmayer (N. Y. Med. Jour., October 23, 1909) shows the enormous death rate among infants every year in the United States. To meet it successfully we must first know the cause of this great infant mortality. To know these causes we must have accurate, trustworthy statistics of the kind and manner of feeding, and the sanitary conditions of the dwellings of the infants who die. We should know if the parent is employed away from home. There was no city in this country with such a bureau until a few weeks ago, when Dr. Neff, in Philadelphia, attempted to obtain such information. Several cities make house to house canvasses to find how the well child is fed. This is of very little value, because there is no limit to what infants have been fed on and still live and thrive.

Pure fresh milk is necessary, but not the sole key to the problem. Breast feeding gives a certain amount of immunity against illness, and it is necessary for physicians and midwives to encourage and ofttimes insist on it.

Campaigns of education are necessary, but it not only must reach every mother, but be plain and simple enough to be readily understood by even the most ignorant. Newspapers, journals and posters are valuable aids. The medical student must be taught practical and scientific methods of feeding infants. The physicians and midwives must realize their share of the responsibility. The education of the midwife is no minor factor in preventing infant mortality, when one considers that in all cities and towns some fifty per cent. to eighty-five per cent. of the births are under the care of midwives, and these housekeeper nurses have the full care of the infant for the first few weeks of their lives. Much can be done by the intelligent and properly trained midwife in advising the mother.

Every large city needs as an addition to its health bureau, a department of child hygiene, similar to the one existing in New York for the purpose of studying and planning for the health of children and infants.

The work of physicians, health officers, organizations and societies must not overlap. There should

be co-operation, and this can only be done by having one central branch or clearing house, with a proper systematic division of labor. Mothers' associations are valuable aids in the campaign. In some cities the obstacle to results is not poor legislation, or lack of laws, but the lack of applying existing laws in a practical manner.

We are in need of a law that would forbid any employer or factory from knowingly employing in factories a woman or girl within four months after she has given birth to a child.

While the sanitary condition of the slums is not what we desire, and in places needs considerable improvement, to direct the bulk of our time and energy in this direction is a great mistake. When one considers that the foreign population of the United States, that is, those with one or both parents of foreign birth, is 34.5 per cent. of the total population, that as a rule there are more children born to this class than to the native population, and then study the comparative infant death rate for both classes, one can realize how universal infant mortality is. To be effective, a campaign against infant mortality must include all sections of the city and country, all classes and sects, and, above all, must not be confined to three summer months, but extend throughout the year.

Observations Upon the Rigidity of the Chest Muscles as a Sign of Involvement of the Pulmonary Parenchyma.—Dr. F. M. Pottenger (Med. Record, October 23, 1909) finds in the examination of patients suffering from pulmonary tuberculosis muscle rigidity over the affected area to be a constant sign. The rigidity is much greater over dense infiltrations than over infiltrations of a lesser degree, and greater over recent inflammatory filtrations than over old quiescent ones. This muscle rigidity is not limited to the intercostal muscles, but the superficial ones also show it to a marked degree, as, for instance, in picking up the mass of muscles covering the apices of the lungs and comparing the two, the difference is at once apparent, the muscles of the affected side appearing more rigid than those of the other. The intercostal muscles should be palpated with firm pressure.

In acute inflammation this rigidity must be due to a stimulation of the nerves which result in a tonic contraction of the muscular tissue, but this cannot be the case where the rigidity has remained for months and years, so it is assumed on theoretical grounds that certain pathological changes take place in the muscles themselves which result in a dense consistency.

Muscle rigidity is in itself an important diagnostic sign, but it is undoubtedly a factor in the causation of lagging, of diminished motion, contraction, impeded or diminished respiratory murmur and ankylosis of the costosternal articulation. It promises much for early diagnosis, and is of considerable value in helping to differentiate between quiescent and active lesions. The sign is also present in pneumonia, pleurisy and emphysema, and should be looked for in all inflammatory conditions of the lungs and pleura.

The Therapeutic Value of the Antigonococcic Serum and the Gonococcic Bacterins.—Dr. George Knowles Swinburne (Med. Record, October 23, 1909) regards the antigonococci serum as a specific in the treatment of acute gonorrhoeal rheumatism, especially in those cases occurring early in a primary gonorrhoea. The pain and swelling quickly subside, and many cases recover inside of a week to ten days. In the chronic cases of gonorrhoeal rheumatism the action is not as prompt, and relapses are apt to occur, generally due to some indiscretion on the part of the patient.

The serum is of great assistance in epididymitis, both acute and relapsing; here again relapses occur if treatment is given up too soon. In many cases when given in the earliest stages the disease was aborted. In cases of acute prostatitis and vesiculitis the serum has proven of marked benefit in relieving the pain and shortening markedly the attack.

The bacterins are used in the same class of cases, but the action appears to be slower. The local reaction, pain and swelling of the arm, followed by urticaria, which is a very common incident with the serum, has not been noted with the bacterins.

Preservatives in Food.—D. H. Bergey (J. A. M. A., Sept. 4, 1909) has tested the degree of certainty with which the presence of preservatives may be detected in food by means of their antifermentative action on trypsin. Bliss and Novy have shown that of the ordinary digestive ferments trypsin is injured to the greatest extent by formaldehyde—apart from the effect of the preservative on the food constituents themselves, and Sheperd has confirmed these results, finding that nitrous acid affected pancreatic digestion in higher dilution than it did the other ferments which he employed. Bergey has therefore considered trypsin a delicate indication of the presence of preservatives in food. The tests for their detection were carried out by the addition of small amounts of the food to a definite volume of a sterile solution of casein; and determining the inhibiting influence of the preservatived food on the tryptic digestion of the casein by the addition of a few drops of an alcoholic solution of acetic acid to the mixture at the end of a period of digestive action. The evidence collected by scientific investigation all shows that the addition of chemical preservatives to food substances is injurious to the consumer in several ways: The addition of preservatives permits the use of food substances of inferior grade, or not perfectly fresh. The food preservatives, when ingested, must be eliminated subsequently; and such digestion entails extra labor on some special organ or organs leading sooner or later to direct injury. Many of the food preservatives are direct poisons; and their constant ingestion induces chronic poisoning, with its concomitant effects. The food preservatives have an antifermentative effect on the different digestive ferments, especially trypsin; and thus retard digestion and interfere with assimilation. The food preservatives act on the food substances in such a manner as to render them less easily digested or even wholly indigestible; and make it necessary for the body to deal with partly digested food or deprive it altogether of nutrition, especially of nitrogenous food. As a result of the use of food preservatives digestion and assimilation are interfered with, and the general bodily nutrition suffers through organs that are overtaxed and injured in attempting to eliminate the poisonous chemical substances, and in attempting to deal with imperfectly split food substances that may

be in such a state as to preclude their utilization, especially through lack of digestive ferments, because of the loss entailed through digestive action of the food preservatives. Bergey concludes: "We should not allow the greed of unscrupulous manufacturers and dealers to overrule our knowledge of the evil effects of the use of food preservatives. The medical profession owes it to itself to uphold the laudable position assumed by Dr. Wiley in his crusade against food adulteration; and any course which falls short of this will stultify the profession in the eyes of educated humanity of to-day and for all time to come."

Percussion in the Diagnosis of Skull Fractures of the vault or lateral aspects is advocated by J. H. Pringle (Edinburgh Med. Jour., June, 1909). In his method the finger strikes the scalp directly, without any intermediary pleximeter. The patient's head should be supported with examiner's left hand placed beneath the occiput, while the right hand is left free to percuss. Ecchymosis of the scalp will interfere with the examination. If a fracture is present, either the pitch of the note is altered over the fractured zone, or cracked pot resonance is in addition produced. In some cases no change whatever in the percussion note is obtained; but a conscious patient will always complain of pain, always elicited by percussion at one area, and often along a definite line.

Aural Complications in the Exanthemata.—C. R. C. Borden (Boston Med & Surg. Jour., July 15, 1909) observes that in scarlet fever children are quite liable to middle ear inflammation, which may or may not involve the mastoid; adults are much less so, and rarely have mastoiditis. In measles both adults and children are very susceptible to middle ear involvement; and adults are especially in danger of mastoiditis. In cases where great aural discharge is present for more than two or three weeks the mastoid operation should be seriously considered as a means of providing drainage, other than through a small pinhole perforation in the delicate membrana tympani. In occasional cases the diagnosis may be difficult. If after carefully ruling out every other possible cause by exclusion, and the mastoid remains in doubt; if the symptoms are at all serious, operate: the danger is greatest from waiting. If, after the acute symptoms of scarlet fever and measles have subsided pus formation in the middle ear is kept active by profuse nasal or naso - pharyngeal discharges, examine the patient for adenoids; if these growths are present, remove them thoroughly; in the course of diphtheria this proceeding is, however, unquestionable. General practitioners should regard aural discharges as a menace to hearing and occasionally to life; and not as a more or less common complication without special importance. In a series of 1,164 of the author's cases—children up to sixteen years of age having aural diseases, 31.6 per cent. had chronic purulent otitis media of long standing

Volvulus, states H. F. Waterhouse (Brit. Med. Jour., May 29, 1909) is not so rare as is generally supposed. There are two kinds of intestinal obstruction: Those in which there is mechanical obstruction; and where there is strangulation of the intestine in addition to mechanical obstruction; valvulus comes in the latter class, which is by far the more serious. The greater number of cases are in the sigmoid flexure—its mesentery becoming much elongated, usually by chronic constipation. This condition occurs in from three to four per cent. of all cases of intestinal obstruction, is far more common in the male and most frequent from the fiftieth to the sixtieth year. Spontaneous reduction is by no means infrequent. Great suddenness usually in a patient in good health, characterizes the onset. Waterhouse will not use cocaine, as in other acute abdominal emergencies. Many cases can be reduced by the use of rectal enemata.

Meat Infection in Tuberculosis.—A. R. Littlejohn, (Practitioner, June, 1909) believes than man can contract tuberculosis from cattle, but such transmission is not easy to effect, considering the difficulty of transmitting human tuberculosis to cattle. Moreover, one must swallow many tubercle bacilli to contract the disease; and the musculature of tuberculous animals, even in generalized tuberculosis, is rarely infective. (In point of fact, the flesh is the last tissue involved in animal tuberculosis.)

Littlejohn believes that the ordinary process of cooking will in most cases suffice to render contaminated meat non-effective. It has been shown that during a period in which the consumption of meat by man has increased in quantity, human tuberculosis has declined. (Still, no one will wittingly eat the meat of tuberculous cattle; nor should this be expected of one's fellows.)

Hypnoidization is quite simple, declares B. Sidis (Bost. Med. and Surg. Jour., Aug. 19, 1909): The patient is told to close his eyes and keep very quiet, in a dark and quiet room; he is then asked to attend to some such monotonous stimulant as a metronome, or to a continuous note produced by a tuning fork, or to smell some pleasant odor, or to submit to a gentle massage in which touch and pressure are of uniform intensity. Fatigue, physical and mental, especially emotional, is a favorable condition, as are also a prolonged warm bath with relaxation and a predisposition to sleep. One should therefore first attempt hypnoidization late at night, when the patient is both tired and sleepy. Generally darkness, quietness, repose, fixation on a bright point, and listening to the monotonous buzzing of an inductorium favor the hypnoidal state, even at the very first attempt. Once this is induced we can either attempt to follow up the history and the development of the malady, or we may work chiefly for the therapeutic effect and treat the present symptoms; it were best, however, to combine the two procedures, as the cure is then far more effective and far more stable. When the history of the origin and development of the discase cannot be traced on account of the patient's age or unintelligence, the therapeutic effects alone of the hypnoidal states have been utilized. The results are of great benefit to the patient, though they do not give all the desired scientific information.

Chronic Heart Disease.—F. J. Wethered (Lancet, May 22, 1909) sustains the force of the heart, employs measures for promoting the nutrition of the heart; reduces the peripheral resistance. Among symptomatic indications for treatment he finds insomnia important; if rest can be secured the patient, great relief would often follow. The bromides are the most useful drugs for the relief of palpitation.

MISCELLANY

A Disconcerting Prodigy.—It is stated that Mr. William James Sidis, the Harvard prodigy, had written a text book on oratory at the age of five.

Chorea and Rheumatism.—C. J. Macalister (Brit. Med. Jour., Aug. 28, 1909) considers there is less real association between chorea and rheumatism than is generally supposed; chorea may be due to an infective toxemia of distinctive character.

Simonetta de' Vespucci was "the model of all Botticelli's fairest women," so declared Ruskin. She appears in the "Primevera" which was painted when she was twenty-two, six years after her marriage and not long before her death from consumption.

Calomel in Asthma.—C. B. F. Tiny (Brit. Med. Jour., Sept. 25, 1909) uses calomel in from one-half to two grain doses in addition to the usual antispasmodic remedies; he has found rapid relief even before purgation. Other cathartics do not have the same effect—certainly not so rapidly. The ease with which the powder or tablets are administered is an important consideration.

Physical Therapy of Pulmonary Edema.—Kulenkamp (Deut. Mediz. Wochenschr., Aug. 5, 1909), in the case of a man of sixty-three, with chronic cardiac lesions and dyspnoea, in whom pulmonary edema supervened, sought to help the patient's expiratory efforts by forced compression of the thorax synchronously. The patient experienced much comfort, and the edema gradually cleared up, the patient meanwhile expectorating large amounts of fluid.

Arthrotomy of the Knee.—C. B. Lockwood (Brit. Med. Jour., July 3, 1909) discusses the various conditions in which this operation is justifiable for the removal of inflamed synovial fringes and of the "pads of Malgaigne." The latter are small adipose pads immediately above the articular surfaces of the femur and on either side of the upper end of the patella. Malgaigne described them first in 1859; they lead to errors in diagnosis by being considered foreign bodies.

Steamer Stewardesses to be Trained Nurses.—A trained nurse may be found on a few of the large ocean liners, but the idea is novel to train stewardesses as such. One of the largest lines sailing out of Liverpool has arranged to have its stewardesses undergo a regular course of training at the Royal Southern Hospital. Many of the vessels of this line—the Elder Dempster Company—ply to the west coast of Africa and the Canaries; and particular instruction is given them in the treatment and management of malaria cases.

A State Hygienic Laboratory, in connection with the central department at Albany, has been established at Cornell University to serve the needs of the surrounding counties. Dr. Eugene H. Porter, the State Commissioner of Health, believes that this new laboratory will enable the State to have systematic inspection and control over public water supplies; and will provide for inspection of sewage, of milk, and for sputum analysis. Moreover, a State school of sanitarians will undoubtedly be established at Cornell.

Telepathy.—Prof. Hugo Münsterberg declares this to be nothing more than a name for something which does not exist, herein agreeing with the modern psychologists. "Telepathy" has a pretty sound, especially when preceded by the redundancy "mental"; but its meaning observes a contemporary, begs the whole question at issue, and its calm assumption that there is the sort of communication which it would designate, if there were any, has confused and deluded a vast number of amateur scientists and not a few professional ones.

The Ophthalmoscope in Diagnosing Anemia.—Hesse (Deut. Mediz. Woch., Aug. 5, 1909) in fifty cases of definite pernicious anemia found retinal hemorrhages in forty-seven. In fifty-one cases of severe secondary anemia and sixty-four cases of malignant tumors no retinal hemorrhages were discovered. He finds that: retinal hemorrhage belongs to the picture of pernicious anemia; all other anemias, especially the cachectic, carcinoma anemias, show no retinal hemorrhages. Retinal hemorrhage in severe anemia suggests pernicious anemia; their absence suggests carcinoma.

Morbid Conditions of the Pleura.—T. R. Bradshaw (Brit .Med. Jour., May 15, 1909) considers the diagnosis and treatment, the indications for paracentesis in pleural effusion, malignant disease of the pleura and empyema. Any effusion big enough to diagnose is big enough to tap; however, effusions apparently small, and unattended by any special local or constitutional disturbance, should be left for a reasonable time in the hope that they may undergo spontaneous absorption. But if the signs persist the fluid should be drawn off without further delay. Bradshaw does not believe in preliminary exploration. The presence of a dark, chocolate colored fluid suggests malignant disease.

Strophanthin Intravenously in Pneumonia Collapse.—A. K. Stone (Bost. Med. and Surg. Jour., Aug. 19, 1909) reports five cases of pneumonia from which he deduces that in collapse due to cardiac weakness, strophanthin acts promptly and powerfully and enables the patient to rally, the heart resuming its work. These patients passed an amount of urine much greater than the diuresis ordinarily following the crisis of a pneumonia—"the life-giving diuresis," by means of which the toxic products are more rapidly eliminated than would otherwise be likely. But when the patient in the course of his disease, be it pneumonia or typhoid fever, grows progressively weaker, the cardiac stimulation of the strophanthin will hardly be effectual against the gradually flagging heart action.

Psychology and Therapeutics.—Dubois (Berliner Klin. Wochenschr., June 21, 1909) disagrees with James and others of the physiologic school, who regard an emotion as the product of certain primary physical phenomena; he holds rather to the intellectualistic theory, which recognizes the independent entity and power of ideas, and explains the mental life as a psycho-physical parallelism. Hence, in the treatment of psychic disease, attempts should be made, considers Dubois, to influence both elements, the psychic and the physical. The method by which he seeks to modify mental conditions is always educational, never authoritative or suggestive; he describes its application in various psychopathic states. Therapeutic optimism is essential to establishing the right thinking, right feeling and right acting which constitute mental and physical health.

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